



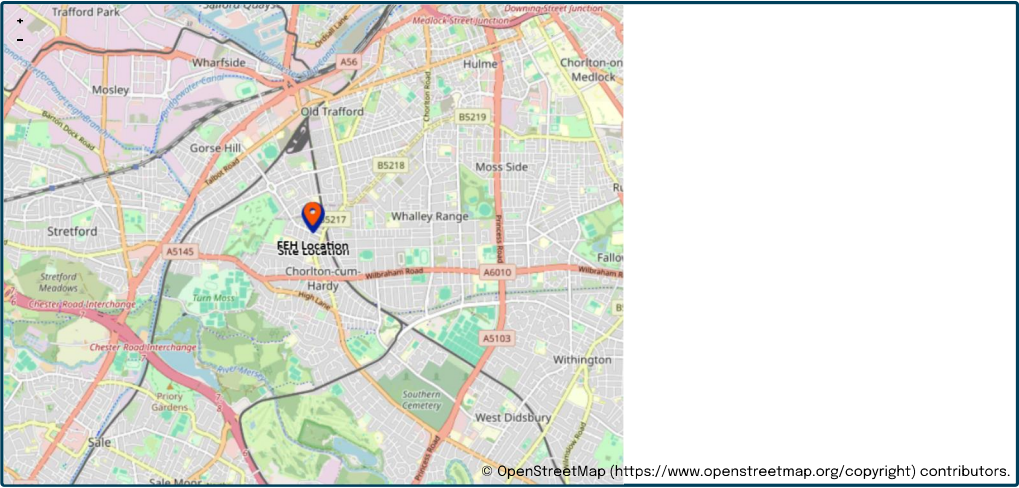
This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). It is recommended that the total storage volume for the site is distributed across the site using multiple SuDS and that hydraulic modelling software is used to undertake and finalise the detailed design of the drainage system.

Project details

Date	24/10/2025
Calculated by	RJC
Reference	Field of O's
Model version	2.2.1

Location

Site name	Field of O's
Site location	Manchester



Site easting (British National Grid)	381566
Site northing (British National Grid)	394387

Site areas

Total site area (ha)	.0203	ha
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Roof area

Total roof area (ha)	.0203	ha
Contributing roof area (ha)	.0203	ha
Non-contributing roof area (ha)	0	ha

Paved area

Total paved area (ha)		ha
Contributing paved area (ha)		ha
Non-contributing paved area (ha)	0	ha

Grass / vegetated area

Total grass / vegetated area (ha)		ha
Contributing grass / vegetated area (ha)		ha
Non-contributing grass / vegetated area (ha)	0	ha

Total area

Total contributing area (ha)	0.0203	ha
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Contributing areas with urban creep allowance

Urban creep allowance factor	+0% (no creep)
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Storage design parameters

Storage base shape

Rectangular / square

Storage base length to width ratio

3:1

Storage design depth (m)

0.80

m

Storage side slope (1 in x)

Vertical sided

Storage voids ratio (%)

100% (all voids)

Storage volume design return period (years)

1:100 years

Discharge flow rate from the site

Method

Type of site

Greenfield

Specify the method

User specified

User specified discharge

Flow rate (user specified) (l/s)

0.50

l/s

Final discharge rate

Runoff calculation method

User specified

Design flow rate (l/s)

0.5

l/s

Blockage risk

Specify the method

Orifice diameter

Minimum orifice diameter to prevent blockage (mm)

16

mm

Design orifice diameter (mm)

16

mm

My value

Calculated value

16

Flow rate of orifice (l/s)

0.48

l/s

Rainfall and runoff

Rainfall input type

FEH22 CSV file

FEH_Point_Rainfall_FEH22_AM_381559_394388.csv

Distance from FEH location to site (km)

0

km

Climate change allowance factor

140%

Model results

- Maximum discharge flow rate: 0.5 (l/s)
- Outflow orifice diameter: 16 (mm)
- Storage base length: 6.5 (m)
- Storage base width: 2.2 (m)
- Storage base area: 14 (m²)
- Storage total volume: 11 (m³)
- Storage total water volume: 11 (m³)
- Storm return periods run: 1, 2, 10, 30, 100, 200 (years)
- Storm durations run: 15, 30, 60, 120, 180, 240, 360, 540, 720, 900, 1080, 1440, 1800, 2160, 2880, 3600, 4320, 5040, 5760 (minutes)

Return Period (years)	Critical Duration (minutes)	Peak Flow Rate (l/s)	Max Depth (m)	Max water volume (m³)	Max storage volume (m³)
1	360	0.2	0.22	3.1	3.1
2	240	0.3	0.27	3.7	3.7
10	240	0.4	0.47	6.6	6.6
30	240	0.4	0.62	8.6	8.6
100	240	0.5	0.80	11	11
200	360	0.5	0.93	13	13

Please note runoff estimation and storage volume estimation are subject to uncertainty. Storage volume results are therefore reported to the nearest 1 m³ value, unless storage volumes are less than 10 m³, in which case, storage volumes are provided to 1 decimal place.

Disclaimer

This report was produced using the surface water storage volume design tool (2.2.1) developed by HR Wallingford and available at uksuds.com (https://www.ukuds.com/). The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at uksuds.com/terms-conditions (https://www.ukuds.com/terms-conditions). The outputs from this tool have been used to estimate surface water storage volumes for the whole site based on a limiting discharge rate from the site. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, Centre for Ecology and Hydrology, Wallingford Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.

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