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Townfoot Longtown, Carlisle Cumbria CA6 5LY	Rainbox 3SR: 9.6 x 4.8 x 0.42m Plot 2 Arlecdon Road Arlecdon, Frizington	
Date 31/01/2023 File 2301-59 Plot 2 Arlecdon...	Designed by CLP Checked by GA	
Micro Drainage	Source Control 2014.1	

Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 623 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	9.118	0.118	0.2	5.2	O K
30 min Summer	9.167	0.167	0.2	7.3	O K
60 min Summer	9.225	0.225	0.2	9.8	O K
120 min Summer	9.288	0.288	0.2	12.6	O K
180 min Summer	9.324	0.324	0.2	14.2	O K
240 min Summer	9.346	0.346	0.2	15.1	O K
360 min Summer	9.369	0.369	0.2	16.2	O K
480 min Summer	9.381	0.381	0.2	16.7	O K
600 min Summer	9.386	0.386	0.2	16.9	O K
720 min Summer	9.390	0.390	0.2	17.1	O K
960 min Summer	9.392	0.392	0.2	17.2	O K
1440 min Summer	9.386	0.386	0.2	16.9	O K
2160 min Summer	9.368	0.368	0.2	16.1	O K
2880 min Summer	9.346	0.346	0.2	15.1	O K
4320 min Summer	9.301	0.301	0.2	13.2	O K
5760 min Summer	9.259	0.259	0.2	11.3	O K
7200 min Summer	9.221	0.221	0.2	9.7	O K
8640 min Summer	9.187	0.187	0.2	8.2	O K
10080 min Summer	9.158	0.158	0.2	6.9	O K
15 min Winter	9.118	0.118	0.2	5.2	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	92.442	0.0	19
30 min Summer	66.237	0.0	33
60 min Summer	45.415	0.0	64
120 min Summer	30.173	0.0	122
180 min Summer	23.373	0.0	182
240 min Summer	19.320	0.0	242
360 min Summer	14.633	0.0	360
480 min Summer	12.013	0.0	480
600 min Summer	10.296	0.0	546
720 min Summer	9.069	0.0	604
960 min Summer	7.413	0.0	732
1440 min Summer	5.562	0.0	998
2160 min Summer	4.158	0.0	1424
2880 min Summer	3.375	0.0	1820
4320 min Summer	2.512	0.0	2636
5760 min Summer	2.041	0.0	3408
7200 min Summer	1.738	0.0	4176
8640 min Summer	1.525	0.0	4920
10080 min Summer	1.366	0.0	5640
15 min Winter	92.442	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
30 min Winter	9.167	0.167	0.2	7.3	O K
60 min Winter	9.225	0.225	0.2	9.8	O K
120 min Winter	9.288	0.288	0.2	12.6	O K
180 min Winter	9.324	0.324	0.2	14.2	O K
240 min Winter	9.347	0.347	0.2	15.2	O K
360 min Winter	9.371	0.371	0.2	16.2	O K
480 min Winter	9.384	0.384	0.2	16.8	O K
600 min Winter	9.390	0.390	0.2	17.1	O K
720 min Winter	9.391	0.391	0.2	17.1	O K
960 min Winter	9.391	0.391	0.2	17.1	O K
1440 min Winter	9.379	0.379	0.2	16.6	O K
2160 min Winter	9.347	0.347	0.2	15.2	O K
2880 min Winter	9.311	0.311	0.2	13.6	O K
4320 min Winter	9.242	0.242	0.2	10.6	O K
5760 min Winter	9.181	0.181	0.2	7.9	O K
7200 min Winter	9.130	0.130	0.2	5.7	O K
8640 min Winter	9.090	0.090	0.2	3.9	O K
10080 min Winter	9.061	0.061	0.2	2.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
30 min Winter	66.237	0.0	33
60 min Winter	45.415	0.0	62
120 min Winter	30.173	0.0	120
180 min Winter	23.373	0.0	178
240 min Winter	19.320	0.0	236
360 min Winter	14.633	0.0	350
480 min Winter	12.013	0.0	460
600 min Winter	10.296	0.0	568
720 min Winter	9.069	0.0	666
960 min Winter	7.413	0.0	752
1440 min Winter	5.562	0.0	1068
2160 min Winter	4.158	0.0	1516
2880 min Winter	3.375	0.0	1960
4320 min Winter	2.512	0.0	2768
5760 min Winter	2.041	0.0	3568
7200 min Winter	1.738	0.0	4256
8640 min Winter	1.525	0.0	4928
10080 min Winter	1.366	0.0	5448

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	1.000
Region	England and Wales	Cv (Winter)	1.000
M5-60 (mm)	16.200	Shortest Storm (mins)	15
Ratio R	0.250	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.023

Time (mins)		Area
From:	To:	(ha)
0	4	0.023

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Model Details

Storage is Online Cover Level (m) 10.000

Cellular Storage Structure

Invert Level (m) 9.000 Safety Factor 2.0
 Infiltration Coefficient Base (m/hr) 0.03077 Porosity 0.95
 Infiltration Coefficient Side (m/hr) 0.03077

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	46.1	46.1	0.421	0.0	57.6
0.420	46.1	57.6			