

PRP

Catherine House
Old Harborough Road
Brixworth NN6 9BX

Shades Farm - 81270
1 in 100 year storm

Date 27/01/2022
File 81270 - SOAKAWAY BASIN ...

Designed by AGS
Checked by DE

Micro Drainage

Source Control 2018.1.1

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Micro Drainage

Summary of Results for 100 year Return Period

Half Drain Time : 508 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max E Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	110.432	0.132	1.5	0.0	1.5	35.5	O K
30 min Summer	110.472	0.172	1.5	0.0	1.5	46.6	O K
60 min Summer	110.515	0.215	1.5	0.0	1.5	58.2	O K
120 min Summer	110.557	0.257	1.5	0.0	1.5	69.9	O K
180 min Summer	110.581	0.281	1.6	0.0	1.6	76.4	O K
240 min Summer	110.597	0.297	1.6	0.0	1.6	80.7	O K
360 min Summer	110.616	0.316	1.6	0.0	1.6	86.2	O K
480 min Summer	110.629	0.329	1.6	0.0	1.6	89.7	O K
600 min Summer	110.637	0.337	1.6	0.0	1.6	92.0	O K
720 min Summer	110.643	0.343	1.6	0.0	1.6	93.5	O K
960 min Summer	110.648	0.348	1.6	0.0	1.6	94.9	O K
1440 min Summer	110.645	0.345	1.6	0.0	1.6	94.2	O K
2160 min Summer	110.635	0.335	1.6	0.0	1.6	91.3	O K
2880 min Summer	110.623	0.323	1.6	0.0	1.6	88.0	O K
4320 min Summer	110.599	0.299	1.6	0.0	1.6	81.5	O K
5760 min Summer	110.578	0.278	1.6	0.0	1.6	75.6	O K
7200 min Summer	110.558	0.258	1.5	0.0	1.5	70.2	O K
8640 min Summer	110.540	0.240	1.5	0.0	1.5	65.1	O K
10080 min Summer	110.523	0.223	1.5	0.0	1.5	60.4	O K
15 min Winter	110.447	0.147	1.5	0.0	1.5	39.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	94.901	0.0	120.0	23
30 min Summer	62.350	0.0	126.6	38
60 min Summer	39.045	0.0	238.1	68
120 min Summer	23.639	0.0	250.1	126
180 min Summer	17.399	0.0	255.7	186
240 min Summer	13.918	0.0	256.7	246
360 min Summer	10.103	0.0	257.4	366
480 min Summer	8.053	0.0	257.7	484
600 min Summer	6.750	0.0	257.8	604
720 min Summer	5.840	0.0	257.8	722
960 min Summer	4.644	0.0	257.3	962
1440 min Summer	3.357	0.0	255.5	1344
2160 min Summer	2.423	0.0	500.0	1688
2880 min Summer	1.921	0.0	505.7	2076
4320 min Summer	1.382	0.0	498.9	2896
5760 min Summer	1.094	0.0	821.8	3696
7200 min Summer	0.911	0.0	828.4	4536
8640 min Summer	0.785	0.0	833.8	5352
10080 min Summer	0.692	0.0	838.6	6144
15 min Winter	94.901	0.0	123.7	23

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.300	Shortest Storm (mins)	15
Ratio R	0.400	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.199

Time (mins)	Area	Time (mins)	Area
From: To:	(ha)	From: To:	(ha)
0 4	0.100	4 8	0.099

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Model Details

Storage is Online Cover Level (m) 111.000

Infiltration Basin Structure

Invert Level (m) 110.300 Safety Factor 2.0

Infiltration Coefficient Base (m/hr) 0.03816 Porosity 1.00

Infiltration Coefficient Side (m/hr) 0.03816

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	268.0	0.700	288.0

Pipe Outflow Control

Diameter (m) 0.150 Entry Loss Coefficient 0.500

Slope (1:X) 150.0 Coefficient of Contraction 0.600

Length (m) 4.000 Upstream Invert Level (m) 110.660

Roughness k (mm) 0.600

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