

PRP

Catherine House
Old Harborough Road
Brixworth NN6 9BX

Date 29/09/2022
File 82326 - Cellular Attenu...

Micro Drainage

82326 - Norton Juxta
1 in 100 year storm + 40%CC
Cellular Attenuation

Designed by AGS
Checked by DE

Source Control 2018.1.1

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

Half Drain Time : 452 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	98.539	0.539	0.0	1.5	1.5	35.9	O K
30 min Summer	98.698	0.698	0.0	1.5	1.5	46.4	O K
60 min Summer	98.849	0.849	0.0	1.5	1.5	56.5	O K
120 min Summer	98.975	0.975	0.0	1.5	1.5	64.9	O K
180 min Summer	99.023	1.023	0.0	1.5	1.5	68.0	O K
240 min Summer	99.037	1.037	0.0	1.5	1.5	68.9	O K
360 min Summer	99.027	1.027	0.0	1.5	1.5	68.3	O K
480 min Summer	99.006	1.006	0.0	1.5	1.5	66.9	O K
600 min Summer	98.983	0.983	0.0	1.5	1.5	65.4	O K
720 min Summer	98.959	0.959	0.0	1.5	1.5	63.7	O K
960 min Summer	98.907	0.907	0.0	1.5	1.5	60.3	O K
1440 min Summer	98.804	0.804	0.0	1.5	1.5	53.5	O K
2160 min Summer	98.662	0.662	0.0	1.5	1.5	44.0	O K
2880 min Summer	98.538	0.538	0.0	1.5	1.5	35.8	O K
4320 min Summer	98.349	0.349	0.0	1.5	1.5	23.2	O K
5760 min Summer	98.235	0.235	0.0	1.5	1.5	15.6	O K
7200 min Summer	98.188	0.188	0.0	1.4	1.4	12.5	O K
8640 min Summer	98.165	0.165	0.0	1.2	1.2	11.0	O K
10080 min Summer	98.148	0.148	0.0	1.1	1.1	9.8	O K
15 min Winter	98.605	0.605	0.0	1.5	1.5	40.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	138.910	0.0	37.0	19
30 min Summer	91.192	0.0	48.5	33
60 min Summer	57.005	0.0	60.7	62
120 min Summer	34.408	0.0	73.3	122
180 min Summer	25.260	0.0	80.7	182
240 min Summer	20.161	0.0	85.9	240
360 min Summer	14.647	0.0	93.6	344
480 min Summer	11.672	0.0	99.4	396
600 min Summer	9.779	0.0	104.1	456
720 min Summer	8.460	0.0	108.1	520
960 min Summer	6.725	0.0	114.6	654
1440 min Summer	4.859	0.0	124.2	924
2160 min Summer	3.504	0.0	134.3	1320
2880 min Summer	2.777	0.0	141.9	1700
4320 min Summer	1.997	0.0	153.1	2380
5760 min Summer	1.579	0.0	161.4	3056
7200 min Summer	1.316	0.0	168.1	3680
8640 min Summer	1.133	0.0	173.7	4416
10080 min Summer	0.998	0.0	178.5	5144
15 min Winter	138.910	0.0	41.4	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 Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
30 min Winter	98.786	0.786	0.0	1.5	1.5	52.2	O K
60 min Winter	98.958	0.958	0.0	1.5	1.5	63.7	O K
120 min Winter	99.106	1.106	0.0	1.5	1.5	73.6	O K
180 min Winter	99.167	1.167	0.0	1.5	1.5	77.6	O K
240 min Winter	99.190	1.190	0.0	1.5	1.5	79.1	O K
360 min Winter	99.193	1.193	0.0	1.5	1.5	79.3	O K
480 min Winter	99.169	1.169	0.0	1.5	1.5	77.7	O K
600 min Winter	99.133	1.133	0.0	1.5	1.5	75.4	O K
720 min Winter	99.102	1.102	0.0	1.5	1.5	73.3	O K
960 min Winter	99.031	1.031	0.0	1.5	1.5	68.6	O K
1440 min Winter	98.879	0.879	0.0	1.5	1.5	58.4	O K
2160 min Winter	98.663	0.663	0.0	1.5	1.5	44.1	O K
2880 min Winter	98.478	0.478	0.0	1.5	1.5	31.8	O K
4320 min Winter	98.231	0.231	0.0	1.5	1.5	15.3	O K
5760 min Winter	98.172	0.172	0.0	1.3	1.3	11.4	O K
7200 min Winter	98.144	0.144	0.0	1.1	1.1	9.6	O K
8640 min Winter	98.125	0.125	0.0	0.9	0.9	8.3	O K
10080 min Winter	98.110	0.110	0.0	0.8	0.8	7.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
30 min Winter	91.192	0.0	54.4	33
60 min Winter	57.005	0.0	68.0	62
120 min Winter	34.408	0.0	82.1	120
180 min Winter	25.260	0.0	90.4	178
240 min Winter	20.161	0.0	96.2	236
360 min Winter	14.647	0.0	104.8	346
480 min Winter	11.672	0.0	111.3	452
600 min Winter	9.779	0.0	116.6	488
720 min Winter	8.460	0.0	121.1	560
960 min Winter	6.725	0.0	128.3	712
1440 min Winter	4.859	0.0	139.1	1010
2160 min Winter	3.504	0.0	150.4	1408
2880 min Winter	2.777	0.0	159.0	1788
4320 min Winter	1.997	0.0	171.5	2380
5760 min Winter	1.579	0.0	180.8	3000
7200 min Winter	1.316	0.0	188.3	3744
8640 min Winter	1.133	0.0	194.5	4488
10080 min Winter	0.998	0.0	199.9	5152

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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)	20.100	Shortest Storm (mins)	15
Ratio R	0.400	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.142

Time (mins)	Area
From:	To: (ha)
0	4 0.142

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Model Details

Storage is Online Cover Level (m) 100.000

Cellular Storage Structure

Invert Level (m) 98.000 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	70.0	0.0	1.201	0.0	0.0
1.200	70.0	0.0			

Pump Outflow Control

Invert Level (m) 98.000

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.200	1.5000	1.800	1.5000	3.400	1.5000	5.000	1.5000
0.400	1.5000	2.000	1.5000	3.600	1.5000	5.200	1.5000
0.600	1.5000	2.200	1.5000	3.800	1.5000	5.400	1.5000
0.800	1.5000	2.400	1.5000	4.000	1.5000	5.600	1.5000
1.000	1.5000	2.600	1.5000	4.200	1.5000	5.800	1.5000
1.200	1.5000	2.800	1.5000	4.400	1.5000	6.000	1.5000
1.400	1.5000	3.000	1.5000	4.600	1.5000		
1.600	1.5000	3.200	1.5000	4.800	1.5000		

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