

JDH Consulting Engineers LLP					Page 1		
96 Norwich Road Tacolneston Norwich NR16 1BY			DR. WILLIAM'S LIBRARY Back of Site Pumped 3 ls				
Date 04/11/2019 08:44 File 2 191101 474_Back of Si...			Designed by jdh Checked by				
Micro Drainage			Source Control 2019.1				
<u>Summary of Results for 100 year Return Period (+40%)</u>							
	Storm Event		Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
	15 min Summer		21.604	0.604	3.0	26.8	O K
	30 min Summer		21.710	0.710	3.0	33.6	O K
	60 min Summer		21.779	0.779	3.0	38.0	O K
	120 min Summer		21.772	0.772	3.0	37.6	O K
	180 min Summer		21.735	0.735	3.0	35.3	O K
	240 min Summer		21.702	0.702	3.0	33.1	O K
	360 min Summer		21.644	0.644	3.0	29.4	O K
	480 min Summer		21.589	0.589	3.0	25.9	O K
	600 min Summer		21.536	0.536	3.0	22.5	O K
	720 min Summer		21.485	0.485	3.0	19.4	O K
	960 min Summer		21.391	0.391	3.0	13.7	O K
	1440 min Summer		21.234	0.234	3.0	5.6	O K
	2160 min Summer		21.048	0.048	3.0	0.2	O K
	2880 min Summer		21.000	0.000	2.4	0.0	O K
	4320 min Summer		21.000	0.000	1.7	0.0	O K
	5760 min Summer		21.000	0.000	1.4	0.0	O K
	7200 min Summer		21.000	0.000	1.1	0.0	O K
	8640 min Summer		21.000	0.000	1.0	0.0	O K
	10080 min Summer		21.000	0.000	0.9	0.0	O K
	15 min Winter		21.662	0.662	3.0	30.6	O K
	30 min Winter		21.787	0.787	3.0	38.5	O K
	Storm Event		Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	
	15 min Summer		149.816	0.0	31.1	24	
	30 min Summer		96.921	0.0	40.3	38	
	60 min Summer		59.609	0.0	49.5	64	
	120 min Summer		35.392	0.0	59.1	114	
	180 min Summer		25.745	0.0	64.4	144	
	240 min Summer		20.425	0.0	68.0	176	
	360 min Summer		14.744	0.0	73.8	244	
	480 min Summer		11.689	0.0	78.0	310	
	600 min Summer		9.755	0.0	81.3	376	
	720 min Summer		8.412	0.0	84.0	440	
	960 min Summer		6.654	0.0	88.6	564	
	1440 min Summer		4.776	0.0	95.5	794	
	2160 min Summer		3.423	0.0	102.6	1108	
	2880 min Summer		2.700	0.0	107.9	0	
	4320 min Summer		1.930	0.0	115.7	0	
	5760 min Summer		1.520	0.0	121.5	0	
	7200 min Summer		1.262	0.0	126.1	0	
	8640 min Summer		1.084	0.0	130.0	0	
	10080 min Summer		0.953	0.0	133.3	0	
	15 min Winter		149.816	0.0	34.9	24	
	30 min Winter		96.921	0.0	45.2	38	
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Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
60 min Winter	21.878	0.878	3.0	44.1	O K
120 min Winter	21.893	0.893	3.0	45.1	O K
180 min Winter	21.840	0.840	3.0	41.8	O K
240 min Winter	21.795	0.795	3.0	39.0	O K
360 min Winter	21.710	0.710	3.0	33.6	O K
480 min Winter	21.626	0.626	3.0	28.2	O K
600 min Winter	21.545	0.545	3.0	23.1	O K
720 min Winter	21.469	0.469	3.0	18.3	O K
960 min Winter	21.326	0.326	3.0	10.2	O K
1440 min Winter	21.067	0.067	3.0	0.4	O K
2160 min Winter	21.000	0.000	2.2	0.0	O K
2880 min Winter	21.000	0.000	1.8	0.0	O K
4320 min Winter	21.000	0.000	1.3	0.0	O K
5760 min Winter	21.000	0.000	1.0	0.0	O K
7200 min Winter	21.000	0.000	0.8	0.0	O K
8640 min Winter	21.000	0.000	0.7	0.0	O K
10080 min Winter	21.000	0.000	0.6	0.0	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	
60 min Winter	59.609	0.0	55.5	64	
120 min Winter	35.392	0.0	66.1	120	
180 min Winter	25.745	0.0	72.2	158	
240 min Winter	20.425	0.0	76.4	190	
360 min Winter	14.744	0.0	82.6	266	
480 min Winter	11.689	0.0	87.3	338	
600 min Winter	9.755	0.0	91.0	406	
720 min Winter	8.412	0.0	94.2	470	
960 min Winter	6.654	0.0	99.2	590	
1440 min Winter	4.776	0.0	106.9	768	
2160 min Winter	3.423	0.0	114.9	0	
2880 min Winter	2.700	0.0	120.8	0	
4320 min Winter	1.930	0.0	129.6	0	
5760 min Winter	1.520	0.0	136.1	0	
7200 min Winter	1.262	0.0	141.2	0	
8640 min Winter	1.084	0.0	145.6	0	
10080 min Winter	0.953	0.0	149.3	0	
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Micro Drainage Source Control 2019.1		

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)	21.000	Shortest Storm (mins)	15
Ratio R	0.433	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.111

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From:	To:	From:	To:	From:	To:
0	4	0.037	4	8	0.037
				8	12
					0.037

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Model Details

Storage is Online Cover Level (m) 23.000

Double Pipe Structure

Diameter (m) 1.200 Length (m) 26.000
Slope (1:X) 200.000 Invert Level (m) 21.000

Pump Outflow Control

Invert Level (m) 20.500

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.200	3.0000	1.800	0.0000	3.400	0.0000	5.000	0.0000
0.400	3.0000	2.000	0.0000	3.600	0.0000	5.200	0.0000
0.600	3.0000	2.200	0.0000	3.800	0.0000	5.400	0.0000
0.800	3.0000	2.400	0.0000	4.000	0.0000	5.600	0.0000
1.000	3.0000	2.600	0.0000	4.200	0.0000	5.800	0.0000
1.200	3.0000	2.800	0.0000	4.400	0.0000	6.000	0.0000
1.400	3.0000	3.000	0.0000	4.600	0.0000		
1.600	0.0000	3.200	0.0000	4.800	0.0000		

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Event: 120 min Winter

