

ABMH					Page 1	
1 The Grove Felpham West Sussex PO22 7EY			Woodcroft Plots 6-12			
Date 06/08/2019 10:50 File FC2789 Woodcroft -plot ...			Designed by MH Checked by			
Micro Drainage			Source Control 2017.1.2			
<u>Summary of Results for 100 year Return Period</u>						
	Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
	15 min Summer	61.541	0.541	1.8	17.1	O K
	30 min Summer	61.658	0.658	1.8	22.4	O K
	60 min Summer	61.755	0.755	1.8	26.8	O K
	120 min Summer	61.804	0.804	1.8	29.0	O K
	180 min Summer	61.796	0.796	1.8	28.7	O K
	240 min Summer	61.779	0.779	1.8	27.9	O K
	360 min Summer	61.749	0.749	1.8	26.5	O K
	480 min Summer	61.716	0.716	1.8	25.0	O K
	600 min Summer	61.683	0.683	1.8	23.5	O K
	720 min Summer	61.648	0.648	1.8	21.9	O K
	960 min Summer	61.569	0.569	1.8	18.4	O K
	1440 min Summer	61.416	0.416	1.8	11.8	O K
	2160 min Summer	61.256	0.256	1.8	5.8	O K
	2880 min Summer	61.162	0.162	1.7	2.8	O K
	4320 min Summer	61.085	0.085	1.4	1.0	O K
	5760 min Summer	61.066	0.066	1.1	0.6	O K
	7200 min Summer	61.057	0.057	1.0	0.5	O K
	8640 min Summer	61.051	0.051	0.8	0.4	O K
	10080 min Summer	61.047	0.047	0.7	0.3	O K
	15 min Winter	61.592	0.592	1.8	19.4	O K
	30 min Winter	61.724	0.724	1.8	25.4	O K
	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	
	15 min Summer	90.674	0.0	18.7	18	
	30 min Summer	61.236	0.0	25.3	33	
	60 min Summer	39.465	0.0	32.6	62	
	120 min Summer	24.529	0.0	40.5	120	
	180 min Summer	18.277	0.0	45.2	154	
	240 min Summer	14.717	0.0	48.6	186	
	360 min Summer	10.863	0.0	53.8	254	
	480 min Summer	8.742	0.0	57.7	324	
	600 min Summer	7.380	0.0	60.9	392	
	720 min Summer	6.422	0.0	63.6	462	
	960 min Summer	5.152	0.0	68.0	598	
	1440 min Summer	3.770	0.0	74.6	834	
	2160 min Summer	2.752	0.0	81.7	1168	
	2880 min Summer	2.198	0.0	87.0	1500	
	4320 min Summer	1.598	0.0	94.9	2200	
	5760 min Summer	1.273	0.0	100.8	2936	
	7200 min Summer	1.068	0.0	105.8	3616	
	8640 min Summer	0.926	0.0	110.0	4400	
	10080 min Summer	0.820	0.0	113.7	4984	
	15 min Winter	90.674	0.0	20.9	18	
	30 min Winter	61.236	0.0	28.3	32	
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Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
60 min Winter	61.840	0.840	1.8	30.7	O K
120 min Winter	61.910	0.910	1.8	33.9	O K
180 min Winter	61.907	0.907	1.8	33.8	O K
240 min Winter	61.882	0.882	1.8	32.6	O K
360 min Winter	61.839	0.839	1.8	30.7	O K
480 min Winter	61.790	0.790	1.8	28.4	O K
600 min Winter	61.738	0.738	1.8	26.0	O K
720 min Winter	61.685	0.685	1.8	23.6	O K
960 min Winter	61.559	0.559	1.8	17.9	O K
1440 min Winter	61.329	0.329	1.8	8.4	O K
2160 min Winter	61.144	0.144	1.7	2.4	O K
2880 min Winter	61.085	0.085	1.4	1.0	O K
4320 min Winter	61.061	0.061	1.0	0.5	O K
5760 min Winter	61.051	0.051	0.8	0.4	O K
7200 min Winter	61.045	0.045	0.7	0.3	O K
8640 min Winter	61.041	0.041	0.6	0.3	O K
10080 min Winter	61.038	0.038	0.5	0.2	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	
60 min Winter	39.465	0.0	36.5	60	
120 min Winter	24.529	0.0	45.3	118	
180 min Winter	18.277	0.0	50.7	170	
240 min Winter	14.717	0.0	54.4	194	
360 min Winter	10.863	0.0	60.2	272	
480 min Winter	8.742	0.0	64.6	350	
600 min Winter	7.380	0.0	68.2	426	
720 min Winter	6.422	0.0	71.2	500	
960 min Winter	5.152	0.0	76.2	644	
1440 min Winter	3.770	0.0	83.6	854	
2160 min Winter	2.752	0.0	91.5	1152	
2880 min Winter	2.198	0.0	97.5	1468	
4320 min Winter	1.598	0.0	106.3	2172	
5760 min Winter	1.273	0.0	112.9	2904	
7200 min Winter	1.068	0.0	118.4	3672	
8640 min Winter	0.926	0.0	123.2	4360	
10080 min Winter	0.820	0.0	127.3	4992	
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<u>Rainfall Details</u> <table> <tr> <td>Rainfall Model</td> <td>FSR</td> <td>Winter Storms</td> <td>Yes</td> </tr> <tr> <td>Return Period (years)</td> <td>100</td> <td>Cv (Summer)</td> <td>0.750</td> </tr> <tr> <td>Region</td> <td>England and Wales</td> <td>Cv (Winter)</td> <td>0.840</td> </tr> <tr> <td>M5-60 (mm)</td> <td>19.500</td> <td>Shortest Storm (mins)</td> <td>15</td> </tr> <tr> <td>Ratio R</td> <td>0.340</td> <td>Longest Storm (mins)</td> <td>10080</td> </tr> <tr> <td>Summer Storms</td> <td>Yes</td> <td>Climate Change %</td> <td>+0</td> </tr> </table> <u>Time Area Diagram</u> Total Area (ha) 0.110 <table> <thead> <tr> <th colspan="2">Time (mins)</th> <th>Area</th> </tr> <tr> <th>From:</th> <th>To:</th> <th>(ha)</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>4</td> <td>0.110</td> </tr> </tbody> </table>			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)	19.500	Shortest Storm (mins)	15	Ratio R	0.340	Longest Storm (mins)	10080	Summer Storms	Yes	Climate Change %	+0	Time (mins)		Area	From:	To:	(ha)	0	4	0.110
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Model Details

Storage is Online Cover Level (m) 62.650

Pipe Structure

Diameter (m) 1.500 Length (m) 30.000
Slope (1:X) 1000.000 Invert Level (m) 61.000

Hydro-Brake® Optimum Outflow Control

Unit Reference MD-SHE-0065-2300-1530-2300
Design Head (m) 1.530
Design Flow (l/s) 2.3
Flush-Flo™ Calculated
Objective Minimise upstream storage
Application Surface
Sump Available Yes
Diameter (mm) 65
Invert Level (m) 61.000
Minimum Outlet Pipe Diameter (mm) 100
Suggested Manhole Diameter (mm) 1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.530	2.3
Flush-Flo™	0.288	1.8
Kick-Flo®	0.583	1.5
Mean Flow over Head Range	-	1.8

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	1.5	1.200	2.1	3.000	3.1	7.000	4.7
0.200	1.8	1.400	2.2	3.500	3.4	7.500	4.8
0.300	1.8	1.600	2.3	4.000	3.6	8.000	5.0
0.400	1.8	1.800	2.5	4.500	3.8	8.500	5.1
0.500	1.7	2.000	2.6	5.000	4.0	9.000	5.2
0.600	1.5	2.200	2.7	5.500	4.2	9.500	5.4
0.800	1.7	2.400	2.8	6.000	4.3		
1.000	1.9	2.600	2.9	6.500	4.5		

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