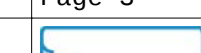


Polypipe Civils						Page 2	
Charnwood Business Park Loughborough Leicestershire LE11 1LE			113 Westfield Lane, Wyke PR266059 1m x 2m x 0.8m				
Date 28/09/17 File T-MD-PR266059_JK_MD2 4L...			Designed by JK Checked by				
Micro Drainage			Source Control 2016.1				
<u>Summary of Results for 30 year Return Period (+30%)</u>							
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	98.937	0.737	0.0	4.0	4.0	1.4	0 K
60 min Winter	98.595	0.395	0.0	4.0	4.0	0.8	0 K
120 min Winter	98.306	0.106	0.0	3.4	3.4	0.2	0 K
180 min Winter	98.283	0.083	0.0	2.6	2.6	0.2	0 K
240 min Winter	98.272	0.072	0.0	2.1	2.1	0.1	0 K
360 min Winter	98.260	0.060	0.0	1.6	1.6	0.1	0 K
480 min Winter	98.253	0.053	0.0	1.3	1.3	0.1	0 K
600 min Winter	98.248	0.048	0.0	1.1	1.1	0.1	0 K
720 min Winter	98.245	0.045	0.0	1.0	1.0	0.1	0 K
960 min Winter	98.240	0.040	0.0	0.8	0.8	0.1	0 K
1440 min Winter	98.234	0.034	0.0	0.6	0.6	0.1	0 K
2160 min Winter	98.229	0.029	0.0	0.4	0.4	0.1	0 K
2880 min Winter	98.226	0.026	0.0	0.4	0.4	0.0	0 K
4320 min Winter	98.222	0.022	0.0	0.3	0.3	0.0	0 K
5760 min Winter	98.220	0.020	0.0	0.2	0.2	0.0	0 K
7200 min Winter	98.218	0.018	0.0	0.2	0.2	0.0	0 K
8640 min Winter	98.217	0.017	0.0	0.2	0.2	0.0	0 K
10080 min Winter	98.216	0.016	0.0	0.1	0.1	0.0	0 K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)			
30 min Winter	58.905	0.0	6.2	27			
60 min Winter	38.009	0.0	8.0	42			
120 min Winter	23.807	0.0	10.0	68			
180 min Winter	17.892	0.0	11.3	98			
240 min Winter	14.529	0.0	12.2	126			
360 min Winter	10.826	0.0	13.6	190			
480 min Winter	8.777	0.0	14.7	246			
600 min Winter	7.453	0.0	15.7	302			
720 min Winter	6.519	0.0	16.4	362			
960 min Winter	5.272	0.0	17.7	476			
1440 min Winter	3.904	0.0	19.7	722			
2160 min Winter	2.886	0.0	21.8	1100			
2880 min Winter	2.327	0.0	23.5	1464			
4320 min Winter	1.716	0.0	25.9	2192			
5760 min Winter	1.381	0.0	27.8	2848			
7200 min Winter	1.168	0.0	29.4	3600			
8640 min Winter	1.019	0.0	30.8	4288			
10080 min Winter	0.907	0.0	32.0	5120			
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Polypipe Civils		Page 3
Charnwood Business Park Loughborough Leicestershire LE11 1LE	113 Westfield Lane, Wyke PR266059 1m x 2m x 0.8m	
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Micro Drainage		
Source Control 2016.1		

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	30	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.000	Shortest Storm (mins)	15
Ratio R	0.328	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+30

Time Area Diagram

Total Area (ha) 0.025

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From: To: (ha)		From: To: (ha)		From: To: (ha)	
0 4 0.008		4 8 0.008		8 12 0.008	

Polypipe Civils		Page 4
Charnwood Business Park Loughborough Leicestershire LE11 1LE	113 Westfield Lane, Wyke PR266059 1m x 2m x 0.8m	
Date 28/09/17 File T-MD-PR266059_JK_MD2 4L...	Designed by JK Checked by	
Micro Drainage Source Control 2016.1		

Model Details

Storage is Online Cover Level (m) 100.000

Cellular Storage Structure

Invert Level (m) 98.200 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	2.0	2.0	0.900	0.0	6.8
0.800	2.0	6.8			

Hydro-Brake Optimum® Outflow Control

Unit Reference MD-SHE-0098-4000-0800-4000
Design Head (m) 0.800
Design Flow (l/s) 4.0
Flush-Flo™ Calculated
Objective Minimise upstream storage
Application Surface
Sump Available Yes
Diameter (mm) 98
Invert Level (m) 98.200
Minimum Outlet Pipe Diameter (mm) 150
Suggested Manhole Diameter (mm) 1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.800	4.0
Flush-Flo™	0.238	4.0
Kick-Flo®	0.525	3.3
Mean Flow over Head Range	-	3.5

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	3.2	1.200	4.8	3.000	7.4	7.000	11.1
0.200	4.0	1.400	5.2	3.500	8.0	7.500	11.4
0.300	4.0	1.600	5.5	4.000	8.5	8.000	11.8
0.400	3.8	1.800	5.8	4.500	9.0	8.500	12.1
0.500	3.5	2.000	6.1	5.000	9.4	9.000	12.5
0.600	3.5	2.200	6.4	5.500	9.9	9.500	12.8
0.800	4.0	2.400	6.7	6.000	10.3		
1.000	4.4	2.600	6.9	6.500	10.7		

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