

Rodgers Leask Limited					Page 1																																																																																																																																																																																																																		
St James House St Mary's Wharf Mansfield Road Derby DE1 3TQ																																																																																																																																																																																																																							
Date 29/07/2019 09:43 File SOAKAWAY SIZING FOR SOU...																																																																																																																																																																																																																							
			Designed by james.melbourne Checked by																																																																																																																																																																																																																				
Micro Drainage			Source Control 2016.1.1																																																																																																																																																																																																																				
Summary of Results for 100 year Return Period (+40%) Half Drain Time : 267 minutes. <table><thead><tr><th>Storm Event</th><th>Max Level (m)</th><th>Max Depth (m)</th><th>Max Infiltration (l/s)</th><th>Max Volume (m³)</th><th>Status</th></tr></thead><tbody><tr><td>15 min Summer</td><td>38.771</td><td>0.421</td><td>4.1</td><td>61.9</td><td>O K</td></tr><tr><td>30 min Summer</td><td>38.893</td><td>0.543</td><td>4.1</td><td>80.0</td><td>O K</td></tr><tr><td>60 min Summer</td><td>39.002</td><td>0.652</td><td>4.1</td><td>96.0</td><td>O K</td></tr><tr><td>120 min Summer</td><td>39.074</td><td>0.724</td><td>4.1</td><td>106.6</td><td>O K</td></tr><tr><td>180 min Summer</td><td>39.083</td><td>0.733</td><td>4.1</td><td>107.9</td><td>O K</td></tr><tr><td>240 min Summer</td><td>39.068</td><td>0.718</td><td>4.1</td><td>105.7</td><td>O K</td></tr><tr><td>360 min Summer</td><td>39.029</td><td>0.679</td><td>4.1</td><td>100.0</td><td>O K</td></tr><tr><td>480 min Summer</td><td>38.995</td><td>0.645</td><td>4.1</td><td>95.0</td><td>O K</td></tr><tr><td>600 min Summer</td><td>38.962</td><td>0.612</td><td>4.1</td><td>90.1</td><td>O K</td></tr><tr><td>720 min Summer</td><td>38.930</td><td>0.580</td><td>4.1</td><td>85.4</td><td>O K</td></tr><tr><td>960 min Summer</td><td>38.868</td><td>0.518</td><td>4.1</td><td>76.3</td><td>O K</td></tr><tr><td>1440 min Summer</td><td>38.753</td><td>0.403</td><td>4.1</td><td>59.4</td><td>O K</td></tr><tr><td>2160 min Summer</td><td>38.610</td><td>0.260</td><td>4.1</td><td>38.3</td><td>O K</td></tr><tr><td>2880 min Summer</td><td>38.506</td><td>0.156</td><td>4.1</td><td>23.0</td><td>O K</td></tr><tr><td>4320 min Summer</td><td>38.405</td><td>0.055</td><td>4.1</td><td>8.0</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>38.391</td><td>0.041</td><td>3.4</td><td>6.1</td><td>O K</td></tr><tr><td>7200 min Summer</td><td>38.385</td><td>0.035</td><td>2.8</td><td>5.1</td><td>O K</td></tr><tr><td>8640 min Summer</td><td>38.380</td><td>0.030</td><td>2.4</td><td>4.4</td><td>O K</td></tr><tr><td>10080 min Summer</td><td>38.376</td><td>0.026</td><td>2.1</td><td>3.8</td><td>O K</td></tr><tr><td>15 min Winter</td><td>38.825</td><td>0.475</td><td>4.1</td><td>69.9</td><td>O K</td></tr></tbody></table> <table><thead><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Time-Peak (mins)</th></tr></thead><tbody><tr><td>15 min Summer</td><td>129.089</td><td>0.0</td><td>25</td></tr><tr><td>30 min Summer</td><td>84.848</td><td>0.0</td><td>39</td></tr><tr><td>60 min Summer</td><td>53.188</td><td>0.0</td><td>68</td></tr><tr><td>120 min Summer</td><td>32.259</td><td>0.0</td><td>124</td></tr><tr><td>180 min Summer</td><td>23.779</td><td>0.0</td><td>182</td></tr><tr><td>240 min Summer</td><td>19.047</td><td>0.0</td><td>220</td></tr><tr><td>360 min Summer</td><td>13.827</td><td>0.0</td><td>280</td></tr><tr><td>480 min Summer</td><td>11.024</td><td>0.0</td><td>344</td></tr><tr><td>600 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Summer	38.893	0.543	4.1	80.0	O K	60 min Summer	39.002	0.652	4.1	96.0	O K	120 min Summer	39.074	0.724	4.1	106.6	O K	180 min Summer	39.083	0.733	4.1	107.9	O K	240 min Summer	39.068	0.718	4.1	105.7	O K	360 min Summer	39.029	0.679	4.1	100.0	O K	480 min Summer	38.995	0.645	4.1	95.0	O K	600 min Summer	38.962	0.612	4.1	90.1	O K	720 min Summer	38.930	0.580	4.1	85.4	O K	960 min Summer	38.868	0.518	4.1	76.3	O K	1440 min Summer	38.753	0.403	4.1	59.4	O K	2160 min Summer	38.610	0.260	4.1	38.3	O K	2880 min Summer	38.506	0.156	4.1	23.0	O K	4320 min Summer	38.405	0.055	4.1	8.0	O K	5760 min Summer	38.391	0.041	3.4	6.1	O K	7200 min Summer	38.385	0.035	2.8	5.1	O K	8640 min Summer	38.380	0.030	2.4	4.4	O K	10080 min Summer	38.376	0.026	2.1	3.8	O K	15 min Winter	38.825	0.475	4.1	69.9	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	15 min Summer	129.089	0.0	25	30 min Summer	84.848	0.0	39	60 min Summer	53.188	0.0	68	120 min Summer	32.259	0.0	124	180 min Summer	23.779	0.0	182	240 min Summer	19.047	0.0	220	360 min Summer	13.827	0.0	280	480 min Summer	11.024	0.0	344	600 min Summer	9.241	0.0	412	720 min Summer	7.997	0.0	480	960 min Summer	6.361	0.0	614	1440 min Summer	4.600	0.0	874	2160 min Summer	3.321	0.0	1240	2880 min Summer	2.633	0.0	1588	4320 min Summer	1.896	0.0	2208	5760 min Summer	1.500	0.0	2936	7200 min Summer	1.251	0.0	3664	8640 min Summer	1.077	0.0	4400	10080 min Summer	0.949	0.0	5136	15 min Winter	129.089	0.0	25
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Date 29/07/2019 09:43		Designed by james.melbourne			
File SOAKAWAY SIZING FOR SOU...		Checked by			
Micro Drainage		Source Control 2016.1.1			
Summary of Results for 100 year Return Period (+40%)					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	38.965	0.615	4.1	90.6	O K
60 min Winter	39.092	0.742	4.1	109.3	O K
120 min Winter	39.194	0.844	4.1	122.9	O K
180 min Winter	39.242	0.892	4.1	126.1	O K
240 min Winter	39.219	0.869	4.1	124.9	O K
360 min Winter	39.146	0.796	4.1	117.3	O K
480 min Winter	39.101	0.751	4.1	110.6	O K
600 min Winter	39.054	0.704	4.1	103.7	O K
720 min Winter	39.007	0.657	4.1	96.7	O K
960 min Winter	38.912	0.562	4.1	82.7	O K
1440 min Winter	38.736	0.386	4.1	56.9	O K
2160 min Winter	38.529	0.179	4.1	26.3	O K
2880 min Winter	38.410	0.060	4.1	8.8	O K
4320 min Winter	38.388	0.038	3.1	5.6	O K
5760 min Winter	38.380	0.030	2.5	4.4	O K
7200 min Winter	38.375	0.025	2.1	3.7	O K
8640 min Winter	38.372	0.022	1.8	3.2	O K
10080 min Winter	38.369	0.019	1.6	2.8	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	84.848	0.0	39		
60 min Winter	53.188	0.0	66		
120 min Winter	32.259	0.0	122		
180 min Winter	23.779	0.0	180		
240 min Winter	19.047	0.0	234		
360 min Winter	13.827	0.0	302		
480 min Winter	11.024	0.0	372		
600 min Winter	9.241	0.0	448		
720 min Winter	7.997	0.0	524		
960 min Winter	6.361	0.0	668		
1440 min Winter	4.600	0.0	938		
2160 min Winter	3.321	0.0	1284		
2880 min Winter	2.633	0.0	1536		
4320 min Winter	1.896	0.0	2208		
5760 min Winter	1.500	0.0	2928		
7200 min Winter	1.251	0.0	3600		
8640 min Winter	1.077	0.0	4360		
10080 min Winter	0.949	0.0	5080		
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Micro Drainage Source Control 2016.1.1		

Model Details

Storage is Online Cover Level (m) 41.000

Cellular Storage Structure

Invert Level (m) 38.350 Safety Factor 1.0
Infiltration Coefficient Base (m/hr) 0.06190 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.06190

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	155.0	237.0	2.600	0.0	237.0
0.200	155.0	237.0	2.800	0.0	237.0
0.400	155.0	237.0	3.000	0.0	237.0
0.600	155.0	237.0	3.200	0.0	237.0
0.800	155.0	237.0	3.400	0.0	237.0
1.000	0.0	237.0	3.600	0.0	237.0
1.200	0.0	237.0	3.800	0.0	237.0
1.400	0.0	237.0	4.000	0.0	237.0
1.600	0.0	237.0	4.200	0.0	237.0
1.800	0.0	237.0	4.400	0.0	237.0
2.000	0.0	237.0	4.600	0.0	237.0
2.200	0.0	237.0	4.800	0.0	237.0
2.400	0.0	237.0	5.000	0.0	237.0

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