

Cadsquare Midlands Ltd				Page 1																																																																																																																																																																																																																			
The Stables Woodbury Lane, Norton Worcester WR5 2PT		WERRINGTON EASTER PARCEL 21-081 / 601a																																																																																																																																																																																																																					
Date 14/10/2021 File Plots 01-04.SRCX		Designed by SCH Checked by																																																																																																																																																																																																																					
Micro Drainage		Source Control 2020.1.3																																																																																																																																																																																																																					
<u>Summary of Results for 100 year Return Period (+40%)</u> Half Drain Time : 147 minutes. <table><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><tr><td>15 min Summer</td><td>263.661</td><td>0.561</td><td>0.9</td><td>9.1</td><td>O K</td></tr><tr><td>30 min Summer</td><td>263.826</td><td>0.726</td><td>1.0</td><td>11.7</td><td>O K</td></tr><tr><td>60 min Summer</td><td>263.966</td><td>0.866</td><td>1.0</td><td>14.0</td><td>O K</td></tr><tr><td>120 min Summer</td><td>264.039</td><td>0.939</td><td>1.1</td><td>15.2</td><td>O K</td></tr><tr><td>180 min Summer</td><td>264.047</td><td>0.947</td><td>1.1</td><td>15.3</td><td>O K</td></tr><tr><td>240 min Summer</td><td>264.035</td><td>0.935</td><td>1.1</td><td>15.1</td><td>O K</td></tr><tr><td>360 min Summer</td><td>263.989</td><td>0.889</td><td>1.0</td><td>14.4</td><td>O K</td></tr><tr><td>480 min Summer</td><td>263.945</td><td>0.845</td><td>1.0</td><td>13.6</td><td>O K</td></tr><tr><td>600 min Summer</td><td>263.901</td><td>0.801</td><td>1.0</td><td>12.9</td><td>O K</td></tr><tr><td>720 min Summer</td><td>263.859</td><td>0.759</td><td>1.0</td><td>12.3</td><td>O K</td></tr><tr><td>960 min Summer</td><td>263.780</td><td>0.680</td><td>0.9</td><td>11.0</td><td>O K</td></tr><tr><td>1440 min Summer</td><td>263.643</td><td>0.543</td><td>0.9</td><td>8.8</td><td>O K</td></tr><tr><td>2160 min Summer</td><td>263.482</td><td>0.382</td><td>0.8</td><td>6.2</td><td>O K</td></tr><tr><td>2880 min Summer</td><td>263.362</td><td>0.262</td><td>0.7</td><td>4.2</td><td>O K</td></tr><tr><td>4320 min Summer</td><td>263.212</td><td>0.112</td><td>0.6</td><td>1.8</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>263.150</td><td>0.050</td><td>0.6</td><td>0.8</td><td>O K</td></tr><tr><td>7200 min Summer</td><td>263.142</td><td>0.042</td><td>0.5</td><td>0.7</td><td>O K</td></tr><tr><td>8640 min Summer</td><td>263.136</td><td>0.036</td><td>0.4</td><td>0.6</td><td>O K</td></tr><tr><td>10080 min Summer</td><td>263.132</td><td>0.032</td><td>0.4</td><td>0.5</td><td>O K</td></tr><tr><td>15 min Winter</td><td>263.733</td><td>0.633</td><td>0.9</td><td>10.2</td><td>O K</td></tr></table> <table><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Time-Peak (mins)</th></tr><tr><td>15 min Summer</td><td>118.033</td><td>0.0</td><td>18</td></tr><tr><td>30 min Summer</td><td>79.213</td><td>0.0</td><td>32</td></tr><tr><td>60 min Summer</td><td>50.812</td><td>0.0</td><td>62</td></tr><tr><td>120 min Summer</td><td>31.544</td><td>0.0</td><td>110</td></tr><tr><td>180 min Summer</td><td>23.551</td><td>0.0</td><td>140</td></tr><tr><td>240 min Summer</td><td>19.022</td><td>0.0</td><td>174</td></tr><tr><td>360 min Summer</td><td>13.959</td><td>0.0</td><td>242</td></tr><tr><td>480 min Summer</td><td>11.214</td><td>0.0</td><td>312</td></tr><tr><td>600 min Summer</td><td>9.454</td><td>0.0</td><td>380</td></tr><tr><td>720 min Summer</td><td>8.220</td><td>0.0</td><td>448</td></tr><tr><td>960 min Summer</td><td>6.585</td><td>0.0</td><td>580</td></tr><tr><td>1440 min Summer</td><td>4.809</td><td>0.0</td><td>838</td></tr><tr><td>2160 min Summer</td><td>3.504</td><td>0.0</td><td>1212</td></tr><tr><td>2880 min Summer</td><td>2.796</td><td>0.0</td><td>1584</td></tr><tr><td>4320 min Summer</td><td>2.031</td><td>0.0</td><td>2252</td></tr><tr><td>5760 min Summer</td><td>1.616</td><td>0.0</td><td>2928</td></tr><tr><td>7200 min Summer</td><td>1.353</td><td>0.0</td><td>3656</td></tr><tr><td>8640 min Summer</td><td>1.170</td><td>0.0</td><td>4400</td></tr><tr><td>10080 min Summer</td><td>1.034</td><td>0.0</td><td>5016</td></tr><tr><td>15 min Winter</td><td>118.033</td><td>0.0</td><td>18</td></tr></table>						Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	15 min Summer	263.661	0.561	0.9	9.1	O K	30 min Summer	263.826	0.726	1.0	11.7	O K	60 min Summer	263.966	0.866	1.0	14.0	O K	120 min Summer	264.039	0.939	1.1	15.2	O K	180 min Summer	264.047	0.947	1.1	15.3	O K	240 min Summer	264.035	0.935	1.1	15.1	O K	360 min Summer	263.989	0.889	1.0	14.4	O K	480 min Summer	263.945	0.845	1.0	13.6	O K	600 min Summer	263.901	0.801	1.0	12.9	O K	720 min Summer	263.859	0.759	1.0	12.3	O K	960 min Summer	263.780	0.680	0.9	11.0	O K	1440 min Summer	263.643	0.543	0.9	8.8	O K	2160 min Summer	263.482	0.382	0.8	6.2	O K	2880 min Summer	263.362	0.262	0.7	4.2	O K	4320 min Summer	263.212	0.112	0.6	1.8	O K	5760 min Summer	263.150	0.050	0.6	0.8	O K	7200 min Summer	263.142	0.042	0.5	0.7	O K	8640 min Summer	263.136	0.036	0.4	0.6	O K	10080 min Summer	263.132	0.032	0.4	0.5	O K	15 min Winter	263.733	0.633	0.9	10.2	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	15 min Summer	118.033	0.0	18	30 min Summer	79.213	0.0	32	60 min Summer	50.812	0.0	62	120 min Summer	31.544	0.0	110	180 min Summer	23.551	0.0	140	240 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The Stables Woodbury Lane, Norton Worcester WR5 2PT		WERRINGTON EASTER PARCEL 21-081 / 601a			
Date 14/10/2021 File Plots 01-04.SRCX		Designed by SCH Checked by			
Micro Drainage		Source Control 2020.1.3			
<u>Summary of Results for 100 year Return Period (+40%)</u>					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	263.921	0.821	1.0	13.3	O K
60 min Winter	264.087	0.987	1.1	15.9	O K
120 min Winter	264.185	1.085	1.1	17.5	O K
180 min Winter	264.190	1.090	1.2	17.6	O K
240 min Winter	264.175	1.075	1.1	17.4	O K
360 min Winter	264.111	1.011	1.1	16.3	O K
480 min Winter	264.044	0.944	1.1	15.2	O K
600 min Winter	263.978	0.878	1.0	14.2	O K
720 min Winter	263.915	0.815	1.0	13.2	O K
960 min Winter	263.798	0.698	0.9	11.3	O K
1440 min Winter	263.604	0.504	0.8	8.1	O K
2160 min Winter	263.392	0.292	0.7	4.7	O K
2880 min Winter	263.246	0.146	0.6	2.4	O K
4320 min Winter	263.145	0.045	0.5	0.7	O K
5760 min Winter	263.136	0.036	0.4	0.6	O K
7200 min Winter	263.130	0.030	0.4	0.5	O K
8640 min Winter	263.126	0.026	0.3	0.4	O K
10080 min Winter	263.123	0.023	0.3	0.4	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	79.213	0.0	32		
60 min Winter	50.812	0.0	60		
120 min Winter	31.544	0.0	116		
180 min Winter	23.551	0.0	146		
240 min Winter	19.022	0.0	184		
360 min Winter	13.959	0.0	262		
480 min Winter	11.214	0.0	338		
600 min Winter	9.454	0.0	410		
720 min Winter	8.220	0.0	482		
960 min Winter	6.585	0.0	620		
1440 min Winter	4.809	0.0	882		
2160 min Winter	3.504	0.0	1256		
2880 min Winter	2.796	0.0	1612		
4320 min Winter	2.031	0.0	2196		
5760 min Winter	1.616	0.0	2936		
7200 min Winter	1.353	0.0	3584		
8640 min Winter	1.170	0.0	4328		
10080 min Winter	1.034	0.0	5072		
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Micro Drainage Source Control 2020.1.3		

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)	18.000	Shortest Storm (mins)	15
Ratio R	0.355	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.044

Time (mins)	Area
From:	To: (ha)
0	4 0.044

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Model Details

Storage is Online Cover Level (m) 264.600

Cellular Storage Structure

Invert Level (m) 263.100
Infiltration Coefficient Base (m/hr) 0.23700
Infiltration Coefficient Side (m/hr) 0.23700
Safety Factor 2.0
Porosity 0.95

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	17.0	17.0	1.201	0.0	36.8
1.200	17.0	36.8			