

MJA Consulting				Page 1																																																																																																																																																																																																																			
Monarch House Barton Lane OX14 3NB		Plots 141 - 149																																																																																																																																																																																																																					
Date 08/03/2018 09:52 File TRENCH SA PLOTS 141 - 1...		Designed by stewart Checked by																																																																																																																																																																																																																					
Innovyze		Source Control 2017.1.2																																																																																																																																																																																																																					
<u>Summary of Results for 100 year Return Period (+40%)</u> Half Drain Time : 94 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>99.455</td><td>0.455</td><td>1.5</td><td>10.8</td><td>O K</td></tr><tr><td>30 min Summer</td><td>99.579</td><td>0.579</td><td>1.7</td><td>13.7</td><td>O K</td></tr><tr><td>60 min Summer</td><td>99.666</td><td>0.666</td><td>1.9</td><td>15.8</td><td>O K</td></tr><tr><td>120 min Summer</td><td>99.696</td><td>0.696</td><td>1.9</td><td>16.5</td><td>O K</td></tr><tr><td>180 min Summer</td><td>99.685</td><td>0.685</td><td>1.9</td><td>16.2</td><td>O K</td></tr><tr><td>240 min Summer</td><td>99.662</td><td>0.662</td><td>1.8</td><td>15.7</td><td>O K</td></tr><tr><td>360 min Summer</td><td>99.615</td><td>0.615</td><td>1.8</td><td>14.6</td><td>O K</td></tr><tr><td>480 min Summer</td><td>99.569</td><td>0.569</td><td>1.7</td><td>13.5</td><td>O K</td></tr><tr><td>600 min Summer</td><td>99.527</td><td>0.527</td><td>1.6</td><td>12.5</td><td>O K</td></tr><tr><td>720 min Summer</td><td>99.487</td><td>0.487</td><td>1.6</td><td>11.6</td><td>O K</td></tr><tr><td>960 min Summer</td><td>99.418</td><td>0.418</td><td>1.5</td><td>9.9</td><td>O K</td></tr><tr><td>1440 min Summer</td><td>99.309</td><td>0.309</td><td>1.3</td><td>7.3</td><td>O K</td></tr><tr><td>2160 min Summer</td><td>99.196</td><td>0.196</td><td>1.1</td><td>4.6</td><td>O K</td></tr><tr><td>2880 min Summer</td><td>99.121</td><td>0.121</td><td>1.0</td><td>2.9</td><td>O K</td></tr><tr><td>4320 min Summer</td><td>99.050</td><td>0.050</td><td>0.9</td><td>1.2</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>99.040</td><td>0.040</td><td>0.7</td><td>0.9</td><td>O K</td></tr><tr><td>7200 min Summer</td><td>99.033</td><td>0.033</td><td>0.6</td><td>0.8</td><td>O K</td></tr><tr><td>8640 min Summer</td><td>99.029</td><td>0.029</td><td>0.5</td><td>0.7</td><td>O K</td></tr><tr><td>10080 min Summer</td><td>99.026</td><td>0.026</td><td>0.4</td><td>0.6</td><td>O K</td></tr><tr><td>15 min Winter</td><td>99.513</td><td>0.513</td><td>1.6</td><td>12.2</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>134.746</td><td>0.0</td><td>18</td></tr><tr><td>30 min Summer</td><td>90.474</td><td>0.0</td><td>32</td></tr><tr><td>60 min Summer</td><td>57.877</td><td>0.0</td><td>60</td></tr><tr><td>120 min Summer</td><td>35.655</td><td>0.0</td><td>92</td></tr><tr><td>180 min Summer</td><td>26.413</td><td>0.0</td><td>126</td></tr><tr><td>240 min Summer</td><td>21.237</td><td>0.0</td><td>160</td></tr><tr><td>360 min Summer</td><td>15.626</td><td>0.0</td><td>228</td></tr><tr><td>480 min Summer</td><td>12.548</td><td>0.0</td><td>296</td></tr><tr><td>600 min Summer</td><td>10.575</td><td>0.0</td><td>362</td></tr><tr><td>720 min Summer</td><td>9.191</td><td>0.0</td><td>428</td></tr><tr><td>960 min Summer</td><td>7.358</td><td>0.0</td><td>558</td></tr><tr><td>1440 min Summer</td><td>5.368</td><td>0.0</td><td>808</td></tr><tr><td>2160 min Summer</td><td>3.907</td><td>0.0</td><td>1168</td></tr><tr><td>2880 min Summer</td><td>3.115</td><td>0.0</td><td>1524</td></tr><tr><td>4320 min Summer</td><td>2.259</td><td>0.0</td><td>2200</td></tr><tr><td>5760 min Summer</td><td>1.796</td><td>0.0</td><td>2920</td></tr><tr><td>7200 min Summer</td><td>1.506</td><td>0.0</td><td>3640</td></tr><tr><td>8640 min Summer</td><td>1.304</td><td>0.0</td><td>4400</td></tr><tr><td>10080 min Summer</td><td>1.154</td><td>0.0</td><td>5104</td></tr><tr><td>15 min Winter</td><td>134.746</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	99.455	0.455	1.5	10.8	O K	30 min Summer	99.579	0.579	1.7	13.7	O K	60 min Summer	99.666	0.666	1.9	15.8	O K	120 min Summer	99.696	0.696	1.9	16.5	O K	180 min Summer	99.685	0.685	1.9	16.2	O K	240 min Summer	99.662	0.662	1.8	15.7	O K	360 min Summer	99.615	0.615	1.8	14.6	O K	480 min Summer	99.569	0.569	1.7	13.5	O K	600 min Summer	99.527	0.527	1.6	12.5	O K	720 min Summer	99.487	0.487	1.6	11.6	O K	960 min Summer	99.418	0.418	1.5	9.9	O K	1440 min Summer	99.309	0.309	1.3	7.3	O K	2160 min Summer	99.196	0.196	1.1	4.6	O K	2880 min Summer	99.121	0.121	1.0	2.9	O K	4320 min Summer	99.050	0.050	0.9	1.2	O K	5760 min Summer	99.040	0.040	0.7	0.9	O K	7200 min Summer	99.033	0.033	0.6	0.8	O K	8640 min Summer	99.029	0.029	0.5	0.7	O K	10080 min Summer	99.026	0.026	0.4	0.6	O K	15 min Winter	99.513	0.513	1.6	12.2	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	15 min Summer	134.746	0.0	18	30 min Summer	90.474	0.0	32	60 min Summer	57.877	0.0	60	120 min Summer	35.655	0.0	92	180 min Summer	26.413	0.0	126	240 min Summer	21.237	0.0	160	360 min Summer	15.626	0.0	228	480 min Summer	12.548	0.0	296	600 min Summer	10.575	0.0	362	720 min Summer	9.191	0.0	428	960 min Summer	7.358	0.0	558	1440 min Summer	5.368	0.0	808	2160 min Summer	3.907	0.0	1168	2880 min Summer	3.115	0.0	1524	4320 min Summer	2.259	0.0	2200	5760 min Summer	1.796	0.0	2920	7200 min Summer	1.506	0.0	3640	8640 min Summer	1.304	0.0	4400	10080 min Summer	1.154	0.0	5104	15 min Winter	134.746	0.0	18
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status																																																																																																																																																																																																																		
15 min Summer	99.455	0.455	1.5	10.8	O K																																																																																																																																																																																																																		
30 min Summer	99.579	0.579	1.7	13.7	O K																																																																																																																																																																																																																		
60 min Summer	99.666	0.666	1.9	15.8	O K																																																																																																																																																																																																																		
120 min Summer	99.696	0.696	1.9	16.5	O K																																																																																																																																																																																																																		
180 min Summer	99.685	0.685	1.9	16.2	O K																																																																																																																																																																																																																		
240 min Summer	99.662	0.662	1.8	15.7	O K																																																																																																																																																																																																																		
360 min Summer	99.615	0.615	1.8	14.6	O K																																																																																																																																																																																																																		
480 min Summer	99.569	0.569	1.7	13.5	O K																																																																																																																																																																																																																		
600 min Summer	99.527	0.527	1.6	12.5	O K																																																																																																																																																																																																																		
720 min Summer	99.487	0.487	1.6	11.6	O K																																																																																																																																																																																																																		
960 min Summer	99.418	0.418	1.5	9.9	O K																																																																																																																																																																																																																		
1440 min Summer	99.309	0.309	1.3	7.3	O K																																																																																																																																																																																																																		
2160 min Summer	99.196	0.196	1.1	4.6	O K																																																																																																																																																																																																																		
2880 min Summer	99.121	0.121	1.0	2.9	O K																																																																																																																																																																																																																		
4320 min Summer	99.050	0.050	0.9	1.2	O K																																																																																																																																																																																																																		
5760 min Summer	99.040	0.040	0.7	0.9	O K																																																																																																																																																																																																																		
7200 min Summer	99.033	0.033	0.6	0.8	O K																																																																																																																																																																																																																		
8640 min Summer	99.029	0.029	0.5	0.7	O K																																																																																																																																																																																																																		
10080 min Summer	99.026	0.026	0.4	0.6	O K																																																																																																																																																																																																																		
15 min Winter	99.513	0.513	1.6	12.2	O K																																																																																																																																																																																																																		
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)																																																																																																																																																																																																																				
15 min Summer	134.746	0.0	18																																																																																																																																																																																																																				
30 min Summer	90.474	0.0	32																																																																																																																																																																																																																				
60 min Summer	57.877	0.0	60																																																																																																																																																																																																																				
120 min Summer	35.655	0.0	92																																																																																																																																																																																																																				
180 min Summer	26.413	0.0	126																																																																																																																																																																																																																				
240 min Summer	21.237	0.0	160																																																																																																																																																																																																																				
360 min Summer	15.626	0.0	228																																																																																																																																																																																																																				
480 min Summer	12.548	0.0	296																																																																																																																																																																																																																				
600 min Summer	10.575	0.0	362																																																																																																																																																																																																																				
720 min Summer	9.191	0.0	428																																																																																																																																																																																																																				
960 min Summer	7.358	0.0	558																																																																																																																																																																																																																				
1440 min Summer	5.368	0.0	808																																																																																																																																																																																																																				
2160 min Summer	3.907	0.0	1168																																																																																																																																																																																																																				
2880 min Summer	3.115	0.0	1524																																																																																																																																																																																																																				
4320 min Summer	2.259	0.0	2200																																																																																																																																																																																																																				
5760 min Summer	1.796	0.0	2920																																																																																																																																																																																																																				
7200 min Summer	1.506	0.0	3640																																																																																																																																																																																																																				
8640 min Summer	1.304	0.0	4400																																																																																																																																																																																																																				
10080 min Summer	1.154	0.0	5104																																																																																																																																																																																																																				
15 min Winter	134.746	0.0	18																																																																																																																																																																																																																				
©1982-2017 XP Solutions																																																																																																																																																																																																																							

MJA Consulting				Page 2	
Monarch House Barton Lane OX14 3NB		Plots 141 - 149			
Date 08/03/2018 09:52 File TRENCH SA PLOTS 141 - 1...		Designed by stewart Checked by			
Innovyze		Source Control 2017.1.2			
<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	99.656	0.656	1.8	15.6	O K
60 min Winter	99.762	0.762	2.0	18.0	Flood Risk
120 min Winter	99.795	0.795	2.1	18.8	Flood Risk
180 min Winter	99.777	0.777	2.0	18.4	Flood Risk
240 min Winter	99.743	0.743	2.0	17.6	Flood Risk
360 min Winter	99.671	0.671	1.9	15.9	O K
480 min Winter	99.603	0.603	1.8	14.3	O K
600 min Winter	99.541	0.541	1.7	12.8	O K
720 min Winter	99.486	0.486	1.6	11.5	O K
960 min Winter	99.391	0.391	1.4	9.3	O K
1440 min Winter	99.250	0.250	1.2	5.9	O K
2160 min Winter	99.116	0.116	1.0	2.7	O K
2880 min Winter	99.050	0.050	0.9	1.2	O K
4320 min Winter	99.036	0.036	0.6	0.9	O K
5760 min Winter	99.029	0.029	0.5	0.7	O K
7200 min Winter	99.024	0.024	0.4	0.6	O K
8640 min Winter	99.021	0.021	0.4	0.5	O K
10080 min Winter	99.019	0.019	0.3	0.4	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	90.474	0.0	31		
60 min Winter	57.877	0.0	58		
120 min Winter	35.655	0.0	96		
180 min Winter	26.413	0.0	134		
240 min Winter	21.237	0.0	172		
360 min Winter	15.626	0.0	246		
480 min Winter	12.548	0.0	318		
600 min Winter	10.575	0.0	386		
720 min Winter	9.191	0.0	454		
960 min Winter	7.358	0.0	586		
1440 min Winter	5.368	0.0	838		
2160 min Winter	3.907	0.0	1192		
2880 min Winter	3.115	0.0	1456		
4320 min Winter	2.259	0.0	2200		
5760 min Winter	1.796	0.0	2920		
7200 min Winter	1.506	0.0	3672		
8640 min Winter	1.304	0.0	4408		
10080 min Winter	1.154	0.0	5072		
©1982-2017 XP Solutions					

MJA Consulting		Page 3
Monarch House Barton Lane OX14 3NB	Plots 141 - 149	
Date 08/03/2018 09:52 File TRENCH SA PLOTS 141 - 1...	Designed by stewart Checked by	
Innovyze	Source Control 2017.1.2	

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)	20.400	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.047

Time (mins)	Area
From:	To: (ha)
0	4 0.047

©1982-2017 XP Solutions

MJA Consulting		Page 4
Monarch House Barton Lane OX14 3NB	Plots 141 - 149	
Date 08/03/2018 09:52 File TRENCH SA PLOTS 141 - 1...	Designed by stewart Checked by	
Innovyze	Source Control 2017.1.2	

Model Details

Storage is Online Cover Level (m) 100.000

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr) 0.07200	Trench Width (m) 1.0
Infiltration Coefficient Side (m/hr) 0.07200	Trench Length (m) 79.0
Safety Factor 2.0	Slope (1:X) 0.0
Porosity 0.30	Cap Volume Depth (m) 0.000
Invert Level (m) 99.000	Cap Infiltration Depth (m) 0.000

©1982-2017 XP Solutions