

The Civil Engineering Practice				Page 1																																																																																																																																																																																																																			
11 Tungsten Building George Street Fishersgate BN41 1RA		Manor Nursery Angmering West Sussex																																																																																																																																																																																																																					
Date 27/06/2019 File Soakaway 8.SRCX		Designed by S Burgess Checked by SRD																																																																																																																																																																																																																					
Innovyze		Source Control 2017.1.2																																																																																																																																																																																																																					
<u>Summary of Results for 100 year Return Period (+40%)</u> Half Drain Time : 132 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>14.672</td><td>0.972</td><td>0.3</td><td>2.6</td><td>O K</td></tr><tr><td>30 min Summer</td><td>14.965</td><td>1.265</td><td>0.3</td><td>3.4</td><td>O K</td></tr><tr><td>60 min Summer</td><td>15.196</td><td>1.496</td><td>0.3</td><td>3.9</td><td>O K</td></tr><tr><td>120 min Summer</td><td>15.278</td><td>1.578</td><td>0.3</td><td>4.2</td><td>O K</td></tr><tr><td>180 min Summer</td><td>15.246</td><td>1.546</td><td>0.3</td><td>4.1</td><td>O K</td></tr><tr><td>240 min Summer</td><td>15.188</td><td>1.488</td><td>0.3</td><td>3.9</td><td>O K</td></tr><tr><td>360 min Summer</td><td>15.070</td><td>1.370</td><td>0.3</td><td>3.6</td><td>O K</td></tr><tr><td>480 min Summer</td><td>14.949</td><td>1.249</td><td>0.3</td><td>3.3</td><td>O K</td></tr><tr><td>600 min Summer</td><td>14.828</td><td>1.128</td><td>0.3</td><td>3.0</td><td>O K</td></tr><tr><td>720 min Summer</td><td>14.710</td><td>1.010</td><td>0.3</td><td>2.7</td><td>O K</td></tr><tr><td>960 min Summer</td><td>14.492</td><td>0.792</td><td>0.3</td><td>2.2</td><td>O K</td></tr><tr><td>1440 min Summer</td><td>14.143</td><td>0.443</td><td>0.3</td><td>1.3</td><td>O K</td></tr><tr><td>2160 min Summer</td><td>13.852</td><td>0.152</td><td>0.3</td><td>0.5</td><td>O K</td></tr><tr><td>2880 min Summer</td><td>13.790</td><td>0.090</td><td>0.3</td><td>0.4</td><td>O K</td></tr><tr><td>4320 min Summer</td><td>13.766</td><td>0.066</td><td>0.2</td><td>0.3</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>13.753</td><td>0.053</td><td>0.2</td><td>0.2</td><td>O K</td></tr><tr><td>7200 min Summer</td><td>13.744</td><td>0.044</td><td>0.1</td><td>0.2</td><td>O K</td></tr><tr><td>8640 min Summer</td><td>13.738</td><td>0.038</td><td>0.1</td><td>0.2</td><td>O K</td></tr><tr><td>10080 min Summer</td><td>13.734</td><td>0.034</td><td>0.1</td><td>0.1</td><td>O K</td></tr><tr><td>15 min Winter</td><td>14.806</td><td>1.106</td><td>0.3</td><td>3.0</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>128.238</td><td>0.0</td><td>18</td></tr><tr><td>30 min Summer</td><td>86.178</td><td>0.0</td><td>32</td></tr><tr><td>60 min Summer</td><td>55.250</td><td>0.0</td><td>62</td></tr><tr><td>120 min Summer</td><td>34.177</td><td>0.0</td><td>108</td></tr><tr><td>180 min Summer</td><td>25.410</td><td>0.0</td><td>140</td></tr><tr><td>240 min Summer</td><td>20.436</td><td>0.0</td><td>172</td></tr><tr><td>360 min Summer</td><td>15.037</td><td>0.0</td><td>240</td></tr><tr><td>480 min Summer</td><td>12.081</td><td>0.0</td><td>308</td></tr><tr><td>600 min Summer</td><td>10.185</td><td>0.0</td><td>374</td></tr><tr><td>720 min Summer</td><td>8.854</td><td>0.0</td><td>440</td></tr><tr><td>960 min Summer</td><td>7.093</td><td>0.0</td><td>568</td></tr><tr><td>1440 min Summer</td><td>5.178</td><td>0.0</td><td>796</td></tr><tr><td>2160 min Summer</td><td>3.772</td><td>0.0</td><td>1124</td></tr><tr><td>2880 min Summer</td><td>3.009</td><td>0.0</td><td>1468</td></tr><tr><td>4320 min Summer</td><td>2.184</td><td>0.0</td><td>2200</td></tr><tr><td>5760 min Summer</td><td>1.738</td><td>0.0</td><td>2904</td></tr><tr><td>7200 min Summer</td><td>1.455</td><td>0.0</td><td>3616</td></tr><tr><td>8640 min Summer</td><td>1.260</td><td>0.0</td><td>4392</td></tr><tr><td>10080 min Summer</td><td>1.115</td><td>0.0</td><td>5000</td></tr><tr><td>15 min Winter</td><td>128.238</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	14.672	0.972	0.3	2.6	O K	30 min Summer	14.965	1.265	0.3	3.4	O K	60 min Summer	15.196	1.496	0.3	3.9	O K	120 min Summer	15.278	1.578	0.3	4.2	O K	180 min Summer	15.246	1.546	0.3	4.1	O K	240 min Summer	15.188	1.488	0.3	3.9	O K	360 min Summer	15.070	1.370	0.3	3.6	O K	480 min Summer	14.949	1.249	0.3	3.3	O K	600 min Summer	14.828	1.128	0.3	3.0	O K	720 min Summer	14.710	1.010	0.3	2.7	O K	960 min Summer	14.492	0.792	0.3	2.2	O K	1440 min Summer	14.143	0.443	0.3	1.3	O K	2160 min Summer	13.852	0.152	0.3	0.5	O K	2880 min Summer	13.790	0.090	0.3	0.4	O K	4320 min Summer	13.766	0.066	0.2	0.3	O K	5760 min Summer	13.753	0.053	0.2	0.2	O K	7200 min Summer	13.744	0.044	0.1	0.2	O K	8640 min Summer	13.738	0.038	0.1	0.2	O K	10080 min Summer	13.734	0.034	0.1	0.1	O K	15 min Winter	14.806	1.106	0.3	3.0	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	15 min Summer	128.238	0.0	18	30 min Summer	86.178	0.0	32	60 min Summer	55.250	0.0	62	120 min Summer	34.177	0.0	108	180 min Summer	25.410	0.0	140	240 min Summer	20.436	0.0	172	360 min Summer	15.037	0.0	240	480 min Summer	12.081	0.0	308	600 min Summer	10.185	0.0	374	720 min Summer	8.854	0.0	440	960 min Summer	7.093	0.0	568	1440 min Summer	5.178	0.0	796	2160 min Summer	3.772	0.0	1124	2880 min Summer	3.009	0.0	1468	4320 min Summer	2.184	0.0	2200	5760 min Summer	1.738	0.0	2904	7200 min Summer	1.455	0.0	3616	8640 min Summer	1.260	0.0	4392	10080 min Summer	1.115	0.0	5000	15 min Winter	128.238	0.0	18
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status																																																																																																																																																																																																																		
15 min Summer	14.672	0.972	0.3	2.6	O K																																																																																																																																																																																																																		
30 min Summer	14.965	1.265	0.3	3.4	O K																																																																																																																																																																																																																		
60 min Summer	15.196	1.496	0.3	3.9	O K																																																																																																																																																																																																																		
120 min Summer	15.278	1.578	0.3	4.2	O K																																																																																																																																																																																																																		
180 min Summer	15.246	1.546	0.3	4.1	O K																																																																																																																																																																																																																		
240 min Summer	15.188	1.488	0.3	3.9	O K																																																																																																																																																																																																																		
360 min Summer	15.070	1.370	0.3	3.6	O K																																																																																																																																																																																																																		
480 min Summer	14.949	1.249	0.3	3.3	O K																																																																																																																																																																																																																		
600 min Summer	14.828	1.128	0.3	3.0	O K																																																																																																																																																																																																																		
720 min Summer	14.710	1.010	0.3	2.7	O K																																																																																																																																																																																																																		
960 min Summer	14.492	0.792	0.3	2.2	O K																																																																																																																																																																																																																		
1440 min Summer	14.143	0.443	0.3	1.3	O K																																																																																																																																																																																																																		
2160 min Summer	13.852	0.152	0.3	0.5	O K																																																																																																																																																																																																																		
2880 min Summer	13.790	0.090	0.3	0.4	O K																																																																																																																																																																																																																		
4320 min Summer	13.766	0.066	0.2	0.3	O K																																																																																																																																																																																																																		
5760 min Summer	13.753	0.053	0.2	0.2	O K																																																																																																																																																																																																																		
7200 min Summer	13.744	0.044	0.1	0.2	O K																																																																																																																																																																																																																		
8640 min Summer	13.738	0.038	0.1	0.2	O K																																																																																																																																																																																																																		
10080 min Summer	13.734	0.034	0.1	0.1	O K																																																																																																																																																																																																																		
15 min Winter	14.806	1.106	0.3	3.0	O K																																																																																																																																																																																																																		
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)																																																																																																																																																																																																																				
15 min Summer	128.238	0.0	18																																																																																																																																																																																																																				
30 min Summer	86.178	0.0	32																																																																																																																																																																																																																				
60 min Summer	55.250	0.0	62																																																																																																																																																																																																																				
120 min Summer	34.177	0.0	108																																																																																																																																																																																																																				
180 min Summer	25.410	0.0	140																																																																																																																																																																																																																				
240 min Summer	20.436	0.0	172																																																																																																																																																																																																																				
360 min Summer	15.037	0.0	240																																																																																																																																																																																																																				
480 min Summer	12.081	0.0	308																																																																																																																																																																																																																				
600 min Summer	10.185	0.0	374																																																																																																																																																																																																																				
720 min Summer	8.854	0.0	440																																																																																																																																																																																																																				
960 min Summer	7.093	0.0	568																																																																																																																																																																																																																				
1440 min Summer	5.178	0.0	796																																																																																																																																																																																																																				
2160 min Summer	3.772	0.0	1124																																																																																																																																																																																																																				
2880 min Summer	3.009	0.0	1468																																																																																																																																																																																																																				
4320 min Summer	2.184	0.0	2200																																																																																																																																																																																																																				
5760 min Summer	1.738	0.0	2904																																																																																																																																																																																																																				
7200 min Summer	1.455	0.0	3616																																																																																																																																																																																																																				
8640 min Summer	1.260	0.0	4392																																																																																																																																																																																																																				
10080 min Summer	1.115	0.0	5000																																																																																																																																																																																																																				
15 min Winter	128.238	0.0	18																																																																																																																																																																																																																				
©1982-2017 XP Solutions																																																																																																																																																																																																																							

The Civil Engineering Practice					Page 2	
11 Tungsten Building George Street Fishersgate BN41 1RA			Manor Nursery Angmering West Sussex			
Date 27/06/2019 File Soakaway 8.SRCX			Designed by S Burgess Checked by SRD			
Innovyze			Source Control 2017.1.2			
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	15.148	1.448	0.3	3.8	O K	
60 min Winter	15.433	1.733	0.3	4.6	O K	
120 min Winter	15.567	1.867	0.3	4.9	O K	
180 min Winter	15.517	1.817	0.3	4.8	O K	
240 min Winter	15.439	1.739	0.3	4.6	O K	
360 min Winter	15.261	1.561	0.3	4.1	O K	
480 min Winter	15.069	1.369	0.3	3.6	O K	
600 min Winter	14.879	1.179	0.3	3.1	O K	
720 min Winter	14.695	0.995	0.3	2.7	O K	
960 min Winter	14.363	0.663	0.3	1.8	O K	
1440 min Winter	13.895	0.195	0.3	0.6	O K	
2160 min Winter	13.782	0.082	0.3	0.3	O K	
2880 min Winter	13.766	0.066	0.2	0.3	O K	
4320 min Winter	13.748	0.048	0.2	0.2	O K	
5760 min Winter	13.738	0.038	0.1	0.2	O K	
7200 min Winter	13.732	0.032	0.1	0.1	O K	
8640 min Winter	13.728	0.028	0.1	0.1	O K	
10080 min Winter	13.725	0.025	0.1	0.1	O K	
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)			
30 min Winter	86.178	0.0	32			
60 min Winter	55.250	0.0	60			
120 min Winter	34.177	0.0	116			
180 min Winter	25.410	0.0	150			
240 min Winter	20.436	0.0	186			
360 min Winter	15.037	0.0	262			
480 min Winter	12.081	0.0	336			
600 min Winter	10.185	0.0	404			
720 min Winter	8.854	0.0	472			
960 min Winter	7.093	0.0	598			
1440 min Winter	5.178	0.0	806			
2160 min Winter	3.772	0.0	1100			
2880 min Winter	3.009	0.0	1468			
4320 min Winter	2.184	0.0	2144			
5760 min Winter	1.738	0.0	2912			
7200 min Winter	1.455	0.0	3672			
8640 min Winter	1.260	0.0	4360			
10080 min Winter	1.115	0.0	5128			
©1982-2017 XP Solutions						

The Civil Engineering Practice		Page 3
11 Tungsten Building George Street Fishersgate BN41 1RA	Manor Nursery Angmering West Sussex	
Date 27/06/2019 File Soakaway 8.SRCX	Designed by S Burgess Checked by SRD	
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)	19.500	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.012

Time (mins)	Area
From:	To: (ha)
0	4 0.012

©1982-2017 XP Solutions

The Civil Engineering Practice		Page 4																				
11 Tungsten Building George Street Fishersgate BN41 1RA	Manor Nursery Angmering West Sussex																					
Date 27/06/2019 File Soakaway 8.SRCX	Designed by S Burgess Checked by SRD																					
Innovyze Source Control 2017.1.2																						
<u>Model Details</u> Storage is Online Cover Level (m) 15.900 <u>Lined Soakaway Structure</u> <table> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.00000</td> <td>Ring Diameter (m)</td> <td>1.80</td> </tr> <tr> <td>Infiltration Coefficient Side (m/hr)</td> <td>2.16000</td> <td>Pit Multiplier</td> <td>1.5</td> </tr> <tr> <td>Safety Factor</td> <td>2.0</td> <td>Number Required</td> <td>1</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Cap Volume Depth (m)</td> <td>2.200</td> </tr> <tr> <td>Invert Level (m)</td> <td>13.700</td> <td>Cap Infiltration Depth (m)</td> <td>0.100</td> </tr> </table>			Infiltration Coefficient Base (m/hr)	0.00000	Ring Diameter (m)	1.80	Infiltration Coefficient Side (m/hr)	2.16000	Pit Multiplier	1.5	Safety Factor	2.0	Number Required	1	Porosity	0.30	Cap Volume Depth (m)	2.200	Invert Level (m)	13.700	Cap Infiltration Depth (m)	0.100
Infiltration Coefficient Base (m/hr)	0.00000	Ring Diameter (m)	1.80																			
Infiltration Coefficient Side (m/hr)	2.16000	Pit Multiplier	1.5																			
Safety Factor	2.0	Number Required	1																			
Porosity	0.30	Cap Volume Depth (m)	2.200																			
Invert Level (m)	13.700	Cap Infiltration Depth (m)	0.100																			
©1982-2017 XP Solutions																						