

The Civil Engineering Practice					Page 1																																																																																																																																																																																																																			
11 Tungsten Building George Street Fishersgate BN41 1RA			Manor Nursery Angmering West Sussex																																																																																																																																																																																																																					
Date 23/09/2020 File Soakaway 1 Factor Safet...			Designed by S Burgess Checked by SRD																																																																																																																																																																																																																					
Innovyze			Source Control 2020.1																																																																																																																																																																																																																					
Summary of Results for 100 year Return Period (+40%) Half Drain Time : 784 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>13.554</td><td>0.554</td><td>1.1</td><td>36.8</td><td>O K</td></tr><tr><td>30 min Summer</td><td>13.739</td><td>0.739</td><td>1.1</td><td>49.2</td><td>O K</td></tr><tr><td>60 min Summer</td><td>13.934</td><td>0.934</td><td>1.1</td><td>62.1</td><td>O K</td></tr><tr><td>120 min Summer</td><td>14.123</td><td>1.123</td><td>1.1</td><td>74.7</td><td>O K</td></tr><tr><td>180 min Summer</td><td>14.219</td><td>1.219</td><td>1.1</td><td>81.0</td><td>O K</td></tr><tr><td>240 min Summer</td><td>14.272</td><td>1.272</td><td>1.1</td><td>84.6</td><td>O K</td></tr><tr><td>360 min Summer</td><td>14.333</td><td>1.333</td><td>1.1</td><td>88.6</td><td>O K</td></tr><tr><td>480 min Summer</td><td>14.356</td><td>1.356</td><td>1.1</td><td>90.2</td><td>O K</td></tr><tr><td>600 min Summer</td><td>14.359</td><td>1.359</td><td>1.1</td><td>90.4</td><td>O K</td></tr><tr><td>720 min Summer</td><td>14.356</td><td>1.356</td><td>1.1</td><td>90.2</td><td>O K</td></tr><tr><td>960 min Summer</td><td>14.341</td><td>1.341</td><td>1.1</td><td>89.2</td><td>O K</td></tr><tr><td>1440 min Summer</td><td>14.293</td><td>1.293</td><td>1.1</td><td>86.0</td><td>O K</td></tr><tr><td>2160 min Summer</td><td>14.199</td><td>1.199</td><td>1.1</td><td>79.8</td><td>O K</td></tr><tr><td>2880 min Summer</td><td>14.101</td><td>1.101</td><td>1.1</td><td>73.2</td><td>O K</td></tr><tr><td>4320 min Summer</td><td>13.913</td><td>0.913</td><td>1.1</td><td>60.7</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>13.751</td><td>0.751</td><td>1.1</td><td>49.9</td><td>O K</td></tr><tr><td>7200 min Summer</td><td>13.618</td><td>0.618</td><td>1.1</td><td>41.1</td><td>O K</td></tr><tr><td>8640 min Summer</td><td>13.516</td><td>0.516</td><td>1.1</td><td>34.3</td><td>O K</td></tr><tr><td>10080 min Summer</td><td>13.441</td><td>0.441</td><td>1.1</td><td>29.3</td><td>O K</td></tr><tr><td>15 min Winter</td><td>13.622</td><td>0.622</td><td>1.1</td><td>41.3</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>128.238</td><td>0.0</td><td>22</td></tr><tr><td>30 min Summer</td><td>86.178</td><td>0.0</td><td>36</td></tr><tr><td>60 min Summer</td><td>55.250</td><td>0.0</td><td>64</td></tr><tr><td>120 min Summer</td><td>34.177</td><td>0.0</td><td>124</td></tr><tr><td>180 min Summer</td><td>25.410</td><td>0.0</td><td>184</td></tr><tr><td>240 min Summer</td><td>20.436</td><td>0.0</td><td>242</td></tr><tr><td>360 min Summer</td><td>15.037</td><td>0.0</td><td>362</td></tr><tr><td>480 min Summer</td><td>12.081</td><td>0.0</td><td>480</td></tr><tr><td>600 min Summer</td><td>10.185</td><td>0.0</td><td>582</td></tr><tr><td>720 min Summer</td><td>8.854</td><td>0.0</td><td>626</td></tr><tr><td>960 min Summer</td><td>7.093</td><td>0.0</td><td>750</td></tr><tr><td>1440 min Summer</td><td>5.178</td><td>0.0</td><td>1010</td></tr><tr><td>2160 min Summer</td><td>3.772</td><td>0.0</td><td>1412</td></tr><tr><td>2880 min Summer</td><td>3.009</td><td>0.0</td><td>1820</td></tr><tr><td>4320 min Summer</td><td>2.184</td><td>0.0</td><td>2596</td></tr><tr><td>5760 min Summer</td><td>1.738</td><td>0.0</td><td>3344</td></tr><tr><td>7200 min Summer</td><td>1.455</td><td>0.0</td><td>4040</td></tr><tr><td>8640 min Summer</td><td>1.260</td><td>0.0</td><td>4752</td></tr><tr><td>10080 min Summer</td><td>1.115</td><td>0.0</td><td>5352</td></tr><tr><td>15 min Winter</td><td>128.238</td><td>0.0</td><td>22</td></tr></tbody></table>							Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	15 min Summer	13.554	0.554	1.1	36.8	O K	30 min Summer	13.739	0.739	1.1	49.2	O K	60 min Summer	13.934	0.934	1.1	62.1	O K	120 min Summer	14.123	1.123	1.1	74.7	O K	180 min Summer	14.219	1.219	1.1	81.0	O K	240 min Summer	14.272	1.272	1.1	84.6	O K	360 min Summer	14.333	1.333	1.1	88.6	O K	480 min Summer	14.356	1.356	1.1	90.2	O K	600 min Summer	14.359	1.359	1.1	90.4	O K	720 min Summer	14.356	1.356	1.1	90.2	O K	960 min Summer	14.341	1.341	1.1	89.2	O K	1440 min Summer	14.293	1.293	1.1	86.0	O K	2160 min Summer	14.199	1.199	1.1	79.8	O K	2880 min Summer	14.101	1.101	1.1	73.2	O K	4320 min Summer	13.913	0.913	1.1	60.7	O K	5760 min Summer	13.751	0.751	1.1	49.9	O K	7200 min Summer	13.618	0.618	1.1	41.1	O K	8640 min Summer	13.516	0.516	1.1	34.3	O K	10080 min Summer	13.441	0.441	1.1	29.3	O K	15 min Winter	13.622	0.622	1.1	41.3	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	15 min Summer	128.238	0.0	22	30 min Summer	86.178	0.0	36	60 min 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The Civil Engineering Practice						Page 2
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Date 23/09/2020 File Soakaway 1 Factor Safet...			Designed by S Burgess Checked by SRD			
Innovyze			Source Control 2020.1			
<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		13.830	0.830	1.1	55.2	O K
60 min Winter		14.050	1.050	1.1	69.9	O K
120 min Winter		14.267	1.267	1.1	84.2	O K
180 min Winter		14.378	1.378	1.1	91.6	O K
240 min Winter		14.442	1.442	1.1	95.9	O K
360 min Winter		14.519	1.519	1.1	101.0	O K
480 min Winter		14.556	1.556	1.1	103.5	O K
600 min Winter		14.569	1.569	1.1	104.3	O K
720 min Winter		14.568	1.568	1.1	104.2	O K
960 min Winter		14.538	1.538	1.1	102.3	O K
1440 min Winter		14.469	1.469	1.1	97.7	O K
2160 min Winter		14.330	1.330	1.1	88.5	O K
2880 min Winter		14.179	1.179	1.1	78.4	O K
4320 min Winter		13.891	0.891	1.1	59.3	O K
5760 min Winter		13.652	0.652	1.1	43.4	O K
7200 min Winter		13.477	0.477	1.1	31.7	O K
8640 min Winter		13.388	0.388	1.1	25.8	O K
10080 min Winter		13.348	0.348	1.0	23.2	O K
Storm Event		Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter		86.178	0.0	36		
60 min Winter		55.250	0.0	64		
120 min Winter		34.177	0.0	122		
180 min Winter		25.410	0.0	180		
240 min Winter		20.436	0.0	238		
360 min Winter		15.037	0.0	354		
480 min Winter		12.081	0.0	468		
600 min Winter		10.185	0.0	578		
720 min Winter		8.854	0.0	686		
960 min Winter		7.093	0.0	876		
1440 min Winter		5.178	0.0	1096		
2160 min Winter		3.772	0.0	1544		
2880 min Winter		3.009	0.0	1988		
4320 min Winter		2.184	0.0	2768		
5760 min Winter		1.738	0.0	3512		
7200 min Winter		1.455	0.0	4104		
8640 min Winter		1.260	0.0	4664		
10080 min Winter		1.115	0.0	5352		
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The Civil Engineering Practice		Page 3
11 Tungsten Building George Street Fishersgate BN41 1RA	Manor Nursery Angmering West Sussex	
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File Soakaway 1 Factor Safet...	Checked by SRD	
Innovyze		Source Control 2020.1

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) 0.157

Time (mins)	Area	Time (mins)	Area
From:	To: (ha)	From:	To: (ha)
0	4 0.119	4	8 0.038

Time Area Diagram

Total Area (ha) 0.000

Time (mins)	Area
From:	To: (ha)
0	4 0.000

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The Civil Engineering Practice		Page 4																				
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<u>Model Details</u> Storage is Online Cover Level (m) 15.800 <u>Infiltration Trench Structure</u> <table> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.00000</td> <td>Trench Width (m)</td> <td>3.5</td> </tr> <tr> <td>Infiltration Coefficient Side (m/hr)</td> <td>1.40400</td> <td>Trench Length (m)</td> <td>20.0</td> </tr> <tr> <td>Safety Factor</td> <td>6.5</td> <td>Slope (1:X)</td> <td>0.0</td> </tr> <tr> <td>Porosity</td> <td>0.95</td> <td>Cap Volume Depth (m)</td> <td>1.600</td> </tr> <tr> <td>Invert Level (m)</td> <td>13.000</td> <td>Cap Infiltration Depth (m)</td> <td>0.400</td> </tr> </table>			Infiltration Coefficient Base (m/hr)	0.00000	Trench Width (m)	3.5	Infiltration Coefficient Side (m/hr)	1.40400	Trench Length (m)	20.0	Safety Factor	6.5	Slope (1:X)	0.0	Porosity	0.95	Cap Volume Depth (m)	1.600	Invert Level (m)	13.000	Cap Infiltration Depth (m)	0.400
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