

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 9 Factor Safet...			Designed by S Burgess Checked by SRD																																																																																																																																																																																																																					
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Summary of Results for 100 year Return Period (+40%) Half Drain Time : 100 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>14.243</td><td>1.243</td><td>0.4</td><td>2.6</td><td>O K</td></tr><tr><td>30 min Summer</td><td>14.655</td><td>1.655</td><td>0.4</td><td>3.3</td><td>O K</td></tr><tr><td>60 min Summer</td><td>14.964</td><td>1.964</td><td>0.4</td><td>3.9</td><td>O K</td></tr><tr><td>120 min Summer</td><td>15.074</td><td>2.074</td><td>0.4</td><td>4.1</td><td>O K</td></tr><tr><td>180 min Summer</td><td>15.038</td><td>2.038</td><td>0.4</td><td>4.0</td><td>O K</td></tr><tr><td>240 min Summer</td><td>14.947</td><td>1.947</td><td>0.4</td><td>3.8</td><td>O K</td></tr><tr><td>360 min Summer</td><td>14.745</td><td>1.745</td><td>0.4</td><td>3.5</td><td>O K</td></tr><tr><td>480 min Summer</td><td>14.539</td><td>1.539</td><td>0.4</td><td>3.1</td><td>O K</td></tr><tr><td>600 min Summer</td><td>14.344</td><td>1.344</td><td>0.4</td><td>2.8</td><td>O K</td></tr><tr><td>720 min Summer</td><td>14.163</td><td>1.163</td><td>0.4</td><td>2.5</td><td>O K</td></tr><tr><td>960 min Summer</td><td>13.857</td><td>0.857</td><td>0.4</td><td>1.9</td><td>O K</td></tr><tr><td>1440 min Summer</td><td>13.465</td><td>0.465</td><td>0.4</td><td>1.2</td><td>O K</td></tr><tr><td>2160 min Summer</td><td>13.328</td><td>0.328</td><td>0.3</td><td>0.9</td><td>O K</td></tr><tr><td>2880 min Summer</td><td>13.269</td><td>0.269</td><td>0.3</td><td>0.7</td><td>O K</td></tr><tr><td>4320 min Summer</td><td>13.201</td><td>0.201</td><td>0.2</td><td>0.6</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>13.162</td><td>0.162</td><td>0.2</td><td>0.4</td><td>O K</td></tr><tr><td>7200 min Summer</td><td>13.136</td><td>0.136</td><td>0.1</td><td>0.4</td><td>O K</td></tr><tr><td>8640 min Summer</td><td>13.118</td><td>0.118</td><td>0.1</td><td>0.3</td><td>O 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Summer	15.074	2.074	0.4	4.1	O K	180 min Summer	15.038	2.038	0.4	4.0	O K	240 min Summer	14.947	1.947	0.4	3.8	O K	360 min Summer	14.745	1.745	0.4	3.5	O K	480 min Summer	14.539	1.539	0.4	3.1	O K	600 min Summer	14.344	1.344	0.4	2.8	O K	720 min Summer	14.163	1.163	0.4	2.5	O K	960 min Summer	13.857	0.857	0.4	1.9	O K	1440 min Summer	13.465	0.465	0.4	1.2	O K	2160 min Summer	13.328	0.328	0.3	0.9	O K	2880 min Summer	13.269	0.269	0.3	0.7	O K	4320 min Summer	13.201	0.201	0.2	0.6	O K	5760 min Summer	13.162	0.162	0.2	0.4	O K	7200 min Summer	13.136	0.136	0.1	0.4	O K	8640 min Summer	13.118	0.118	0.1	0.3	O K	10080 min Summer	13.105	0.105	0.1	0.3	O K	15 min Winter	14.435	1.435	0.4	2.9	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	60	120 min Summer	34.177	0.0	96	180 min Summer	25.410	0.0	128	240 min Summer	20.436	0.0	162	360 min Summer	15.037	0.0	230	480 min Summer	12.081	0.0	296	600 min 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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	14.912	1.912	0.4	3.8	O K
60 min Winter	15.289	2.289	0.4	4.4	Flood Risk
120 min Winter	15.416	2.416	0.4	4.7	Flood Risk
180 min Winter	15.353	2.353	0.4	4.6	Flood Risk
240 min Winter	15.216	2.216	0.4	4.3	Flood Risk
360 min Winter	14.899	1.899	0.4	3.8	O K
480 min Winter	14.576	1.576	0.4	3.2	O K
600 min Winter	14.273	1.273	0.4	2.6	O K
720 min Winter	14.001	1.001	0.4	2.2	O K
960 min Winter	13.579	0.579	0.4	1.4	O K
1440 min Winter	13.339	0.339	0.4	0.9	O K
2160 min Winter	13.251	0.251	0.3	0.7	O K
2880 min Winter	13.202	0.202	0.2	0.6	O K
4320 min Winter	13.148	0.148	0.2	0.4	O K
5760 min Winter	13.118	0.118	0.1	0.3	O K
7200 min Winter	13.099	0.099	0.1	0.3	O K
8640 min Winter	13.086	0.086	0.1	0.2	O K
10080 min Winter	13.076	0.076	0.1	0.2	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	86.178	0.0	31		
60 min Winter	55.250	0.0	60		
120 min Winter	34.177	0.0	110		
180 min Winter	25.410	0.0	138		
240 min Winter	20.436	0.0	178		
360 min Winter	15.037	0.0	250		
480 min Winter	12.081	0.0	320		
600 min Winter	10.185	0.0	384		
720 min Winter	8.854	0.0	444		
960 min Winter	7.093	0.0	550		
1440 min Winter	5.178	0.0	762		
2160 min Winter	3.772	0.0	1124		
2880 min Winter	3.009	0.0	1472		
4320 min Winter	2.184	0.0	2204		
5760 min Winter	1.738	0.0	2936		
7200 min Winter	1.455	0.0	3632		
8640 min Winter	1.260	0.0	4392		
10080 min Winter	1.115	0.0	5032		
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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) 0.012

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

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Model Details

Storage is Online Cover Level (m) 15.500

Lined Soakaway Structure

Infiltration Coefficient Base (m/hr) 0.00000	Ring Diameter (m) 1.50
Infiltration Coefficient Side (m/hr) 1.67040	Pit Multiplier 1.5
Safety Factor 4.0	Number Required 1
Porosity 0.30	Cap Volume Depth (m) 2.500
Invert Level (m) 13.000	Cap Infiltration Depth (m) 0.400

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