

The Civil Engineering Practice					Page 1	
11 Tungsten Building George Street Fishersgate BN41 1RA			Reptune Yapton Storage Calculations			
Date 05/03/2020 File 1 in 100 Plus 40.SRCX			Designed by MK Checked by			
Innovyze			Source Control 2019.1			
Summary of Results for 100 year Return Period (+40%)						
Half Drain Time : 48 minutes.						
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	
15 min Summer	6.443	0.153	1.8	6.2	Flood Risk	
30 min Summer	6.479	0.189	1.8	7.6	Flood Risk	
60 min Summer	6.498	0.208	1.8	8.4	Flood Risk	
120 min Summer	6.496	0.206	1.8	8.3	Flood Risk	
180 min Summer	6.480	0.190	1.8	7.7	Flood Risk	
240 min Summer	6.461	0.171	1.8	6.9	Flood Risk	
360 min Summer	6.426	0.136	1.8	5.5	Flood Risk	
480 min Summer	6.396	0.106	1.8	4.3	Flood Risk	
600 min Summer	6.372	0.082	1.8	3.3	Flood Risk	
720 min Summer	6.355	0.065	1.8	2.6	Flood Risk	
960 min Summer	6.338	0.048	1.7	1.9	Flood Risk	
1440 min Summer	6.326	0.036	1.3	1.5	Flood Risk	
2160 min Summer	6.317	0.027	1.0	1.1	Flood Risk	
2880 min Summer	6.312	0.022	0.8	0.9	Flood Risk	
4320 min Summer	6.306	0.016	0.6	0.6	Flood Risk	
5760 min Summer	6.303	0.013	0.5	0.5	Flood Risk	
7200 min Summer	6.301	0.011	0.4	0.4	Flood Risk	
8640 min Summer	6.299	0.009	0.3	0.4	O K	
10080 min Summer	6.298	0.008	0.3	0.3	O K	
15 min Winter	6.465	0.175	1.8	7.1	Flood Risk	
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)			
15 min Summer	124.343	0.0	17			
30 min Summer	83.917	0.0	30			
60 min Summer	54.074	0.0	48			
120 min Summer	33.635	0.0	82			
180 min Summer	25.091	0.0	116			
240 min Summer	20.228	0.0	150			
360 min Summer	14.907	0.0	214			
480 min Summer	11.995	0.0	274			
600 min Summer	10.125	0.0	332			
720 min Summer	8.810	0.0	386			
960 min Summer	7.068	0.0	494			
1440 min Summer	5.171	0.0	736			
2160 min Summer	3.774	0.0	1100			
2880 min Summer	3.015	0.0	1468			
4320 min Summer	2.192	0.0	2196			
5760 min Summer	1.746	0.0	2864			
7200 min Summer	1.464	0.0	3608			
8640 min Summer	1.268	0.0	4264			
10080 min Summer	1.124	0.0	5080			
15 min Winter	124.343	0.0	17			
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The Civil Engineering Practice					Page 2
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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	6.508	0.218	1.8	8.8	Flood Risk
60 min Winter	6.529	0.239	1.8	9.7	Flood Risk
120 min Winter	6.522	0.232	1.8	9.4	Flood Risk
180 min Winter	6.497	0.207	1.8	8.3	Flood Risk
240 min Winter	6.467	0.177	1.8	7.1	Flood Risk
360 min Winter	6.412	0.122	1.8	4.9	Flood Risk
480 min Winter	6.369	0.079	1.8	3.2	Flood Risk
600 min Winter	6.342	0.052	1.8	2.1	Flood Risk
720 min Winter	6.335	0.045	1.6	1.8	Flood Risk
960 min Winter	6.327	0.037	1.3	1.5	Flood Risk
1440 min Winter	6.317	0.027	1.0	1.1	Flood Risk
2160 min Winter	6.310	0.020	0.7	0.8	Flood Risk
2880 min Winter	6.306	0.016	0.6	0.6	Flood Risk
4320 min Winter	6.302	0.012	0.4	0.5	Flood Risk
5760 min Winter	6.299	0.009	0.3	0.4	O K
7200 min Winter	6.298	0.008	0.3	0.3	O K
8640 min Winter	6.297	0.007	0.2	0.3	O K
10080 min Winter	6.296	0.006	0.2	0.2	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	83.917	0.0	30		
60 min Winter	54.074	0.0	54		
120 min Winter	33.635	0.0	90		
180 min Winter	25.091	0.0	128		
240 min Winter	20.228	0.0	162		
360 min Winter	14.907	0.0	226		
480 min Winter	11.995	0.0	282		
600 min Winter	10.125	0.0	324		
720 min Winter	8.810	0.0	376		
960 min Winter	7.068	0.0	494		
1440 min Winter	5.171	0.0	734		
2160 min Winter	3.774	0.0	1104		
2880 min Winter	3.015	0.0	1472		
4320 min Winter	2.192	0.0	2244		
5760 min Winter	1.746	0.0	2904		
7200 min Winter	1.464	0.0	3560		
8640 min Winter	1.268	0.0	4384		
10080 min Winter	1.124	0.0	5168		
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The Civil Engineering Practice		Page 3																																	
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<u>Rainfall Details</u> <table> <tr> <td>Rainfall Model</td> <td>FSR</td> <td>Winter Storms</td> <td>Yes</td> </tr> <tr> <td>Return Period (years)</td> <td>100</td> <td>Cv (Summer)</td> <td>0.750</td> </tr> <tr> <td>Region</td> <td>England and Wales</td> <td>Cv (Winter)</td> <td>0.840</td> </tr> <tr> <td>M5-60 (mm)</td> <td>19.100</td> <td>Shortest Storm (mins)</td> <td>15</td> </tr> <tr> <td>Ratio R</td> <td>0.342</td> <td>Longest Storm (mins)</td> <td>10080</td> </tr> <tr> <td>Summer Storms</td> <td>Yes</td> <td>Climate Change %</td> <td>+40</td> </tr> </table> <u>Time Area Diagram</u> Total Area (ha) 0.032 <table> <thead> <tr> <th colspan="2">Time (mins)</th> <th>Area</th> </tr> <tr> <th>From:</th> <th>To:</th> <th>(ha)</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>4</td> <td>0.032</td> </tr> </tbody> </table>			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)	19.100	Shortest Storm (mins)	15	Ratio R	0.342	Longest Storm (mins)	10080	Summer Storms	Yes	Climate Change %	+40	Time (mins)		Area	From:	To:	(ha)	0	4	0.032
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<u>Model Details</u> Storage is Online Cover Level (m) 6.600 <u>Infiltration Blanket Structure</u> <table style="margin-left: auto; margin-right: auto;"> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.07200</td> <td>Diameter/Width (m)</td> <td>11.6</td> </tr> <tr> <td>Safety Factor</td> <td>1.5</td> <td>Length (m)</td> <td>11.6</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Cap Volume Depth (m)</td> <td>0.240</td> </tr> <tr> <td>Invert Level (m)</td> <td>6.290</td> <td></td> <td></td> </tr> </table>			Infiltration Coefficient Base (m/hr)	0.07200	Diameter/Width (m)	11.6	Safety Factor	1.5	Length (m)	11.6	Porosity	0.30	Cap Volume Depth (m)	0.240	Invert Level (m)	6.290		
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