

Paul Basham Associates				Page 1																																																																																																																																																																																																																			
Lancaster Court Fareham Hampshire, PO15 5TU		06																																																																																																																																																																																																																					
Date 24/04/2019		Designed by JB																																																																																																																																																																																																																					
File 06 Plots 22-23. lin100 ...		Checked by AS																																																																																																																																																																																																																					
Innovyze		Source Control 2018.1.1																																																																																																																																																																																																																					
<p>Summary of Results for 100 year Return Period (+30%)</p> <p>Half Drain Time : 475 minutes.</p> <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>-1.029</td><td>0.471</td><td>0.1</td><td>2.5</td><td>O K</td></tr><tr><td>30 min Summer</td><td>-0.875</td><td>0.625</td><td>0.1</td><td>3.4</td><td>O K</td></tr><tr><td>60 min Summer</td><td>-0.717</td><td>0.783</td><td>0.1</td><td>4.2</td><td>O K</td></tr><tr><td>120 min Summer</td><td>-0.574</td><td>0.926</td><td>0.1</td><td>5.0</td><td>O K</td></tr><tr><td>180 min Summer</td><td>-0.511</td><td>0.989</td><td>0.1</td><td>5.3</td><td>O K</td></tr><tr><td>240 min Summer</td><td>-0.484</td><td>1.016</td><td>0.1</td><td>5.5</td><td>O K</td></tr><tr><td>360 min Summer</td><td>-0.470</td><td>1.030</td><td>0.1</td><td>5.6</td><td>O K</td></tr><tr><td>480 min Summer</td><td>-0.468</td><td>1.032</td><td>0.1</td><td>5.6</td><td>O K</td></tr><tr><td>600 min Summer</td><td>-0.473</td><td>1.027</td><td>0.1</td><td>5.5</td><td>O K</td></tr><tr><td>720 min Summer</td><td>-0.481</td><td>1.019</td><td>0.1</td><td>5.5</td><td>O K</td></tr><tr><td>960 min Summer</td><td>-0.504</td><td>0.996</td><td>0.1</td><td>5.4</td><td>O K</td></tr><tr><td>1440 min Summer</td><td>-0.564</td><td>0.936</td><td>0.1</td><td>5.1</td><td>O K</td></tr><tr><td>2160 min Summer</td><td>-0.650</td><td>0.850</td><td>0.1</td><td>4.6</td><td>O K</td></tr><tr><td>2880 min Summer</td><td>-0.726</td><td>0.774</td><td>0.1</td><td>4.2</td><td>O K</td></tr><tr><td>4320 min Summer</td><td>-0.854</td><td>0.646</td><td>0.1</td><td>3.5</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>-0.957</td><td>0.543</td><td>0.1</td><td>2.9</td><td>O K</td></tr><tr><td>7200 min Summer</td><td>-1.042</td><td>0.458</td><td>0.1</td><td>2.5</td><td>O K</td></tr><tr><td>8640 min Summer</td><td>-1.111</td><td>0.389</td><td>0.1</td><td>2.1</td><td>O K</td></tr><tr><td>10080 min Summer</td><td>-1.170</td><td>0.330</td><td>0.1</td><td>1.8</td><td>O K</td></tr><tr><td>15 min Winter</td><td>-0.972</td><td>0.528</td><td>0.1</td><td>2.9</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>115.731</td><td>0.0</td><td>19</td></tr><tr><td>30 min Summer</td><td>77.804</td><td>0.0</td><td>33</td></tr><tr><td>60 min Summer</td><td>49.937</td><td>0.0</td><td>62</td></tr><tr><td>120 min Summer</td><td>30.956</td><td>0.0</td><td>122</td></tr><tr><td>180 min Summer</td><td>23.058</td><td>0.0</td><td>182</td></tr><tr><td>240 min Summer</td><td>18.577</td><td>0.0</td><td>240</td></tr><tr><td>360 min Summer</td><td>13.656</td><td>0.0</td><td>330</td></tr><tr><td>480 min Summer</td><td>10.974</td><td>0.0</td><td>386</td></tr><tr><td>600 min Summer</td><td>9.254</td><td>0.0</td><td>450</td></tr><tr><td>720 min Summer</td><td>8.046</td><td>0.0</td><td>514</td></tr><tr><td>960 min Summer</td><td>6.447</td><td>0.0</td><td>654</td></tr><tr><td>1440 min Summer</td><td>4.709</td><td>0.0</td><td>926</td></tr><tr><td>2160 min Summer</td><td>3.432</td><td>0.0</td><td>1340</td></tr><tr><td>2880 min Summer</td><td>2.739</td><td>0.0</td><td>1732</td></tr><tr><td>4320 min Summer</td><td>1.989</td><td>0.0</td><td>2512</td></tr><tr><td>5760 min Summer</td><td>1.583</td><td>0.0</td><td>3288</td></tr><tr><td>7200 min Summer</td><td>1.325</td><td>0.0</td><td>4032</td></tr><tr><td>8640 min Summer</td><td>1.147</td><td>0.0</td><td>4760</td></tr><tr><td>10080 min Summer</td><td>1.015</td><td>0.0</td><td>5456</td></tr><tr><td>15 min Winter</td><td>115.731</td><td>0.0</td><td>19</td></tr></tbody></table>						Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	15 min Summer	-1.029	0.471	0.1	2.5	O K	30 min Summer	-0.875	0.625	0.1	3.4	O K	60 min Summer	-0.717	0.783	0.1	4.2	O K	120 min Summer	-0.574	0.926	0.1	5.0	O K	180 min Summer	-0.511	0.989	0.1	5.3	O K	240 min Summer	-0.484	1.016	0.1	5.5	O K	360 min Summer	-0.470	1.030	0.1	5.6	O K	480 min Summer	-0.468	1.032	0.1	5.6	O K	600 min Summer	-0.473	1.027	0.1	5.5	O K	720 min Summer	-0.481	1.019	0.1	5.5	O K	960 min Summer	-0.504	0.996	0.1	5.4	O K	1440 min Summer	-0.564	0.936	0.1	5.1	O K	2160 min Summer	-0.650	0.850	0.1	4.6	O K	2880 min Summer	-0.726	0.774	0.1	4.2	O K	4320 min Summer	-0.854	0.646	0.1	3.5	O K	5760 min Summer	-0.957	0.543	0.1	2.9	O K	7200 min Summer	-1.042	0.458	0.1	2.5	O K	8640 min Summer	-1.111	0.389	0.1	2.1	O K	10080 min Summer	-1.170	0.330	0.1	1.8	O K	15 min Winter	-0.972	0.528	0.1	2.9	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	15 min Summer	115.731	0.0	19	30 min Summer	77.804	0.0	33	60 min Summer	49.937	0.0	62	120 min Summer	30.956	0.0	122	180 min Summer	23.058	0.0	182	240 min Summer	18.577	0.0	240	360 min Summer	13.656	0.0	330	480 min Summer	10.974	0.0	386	600 min Summer	9.254	0.0	450	720 min Summer	8.046	0.0	514	960 min Summer	6.447	0.0	654	1440 min Summer	4.709	0.0	926	2160 min Summer	3.432	0.0	1340	2880 min Summer	2.739	0.0	1732	4320 min Summer	1.989	0.0	2512	5760 min Summer	1.583	0.0	3288	7200 min Summer	1.325	0.0	4032	8640 min Summer	1.147	0.0	4760	10080 min Summer	1.015	0.0	5456	15 min Winter	115.731	0.0	19
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status																																																																																																																																																																																																																		
15 min Summer	-1.029	0.471	0.1	2.5	O K																																																																																																																																																																																																																		
30 min Summer	-0.875	0.625	0.1	3.4	O K																																																																																																																																																																																																																		
60 min Summer	-0.717	0.783	0.1	4.2	O K																																																																																																																																																																																																																		
120 min Summer	-0.574	0.926	0.1	5.0	O K																																																																																																																																																																																																																		
180 min Summer	-0.511	0.989	0.1	5.3	O K																																																																																																																																																																																																																		
240 min Summer	-0.484	1.016	0.1	5.5	O K																																																																																																																																																																																																																		
360 min Summer	-0.470	1.030	0.1	5.6	O K																																																																																																																																																																																																																		
480 min Summer	-0.468	1.032	0.1	5.6	O K																																																																																																																																																																																																																		
600 min Summer	-0.473	1.027	0.1	5.5	O K																																																																																																																																																																																																																		
720 min Summer	-0.481	1.019	0.1	5.5	O K																																																																																																																																																																																																																		
960 min Summer	-0.504	0.996	0.1	5.4	O K																																																																																																																																																																																																																		
1440 min Summer	-0.564	0.936	0.1	5.1	O K																																																																																																																																																																																																																		
2160 min Summer	-0.650	0.850	0.1	4.6	O K																																																																																																																																																																																																																		
2880 min Summer	-0.726	0.774	0.1	4.2	O K																																																																																																																																																																																																																		
4320 min Summer	-0.854	0.646	0.1	3.5	O K																																																																																																																																																																																																																		
5760 min Summer	-0.957	0.543	0.1	2.9	O K																																																																																																																																																																																																																		
7200 min Summer	-1.042	0.458	0.1	2.5	O K																																																																																																																																																																																																																		
8640 min Summer	-1.111	0.389	0.1	2.1	O K																																																																																																																																																																																																																		
10080 min Summer	-1.170	0.330	0.1	1.8	O K																																																																																																																																																																																																																		
15 min Winter	-0.972	0.528	0.1	2.9	O K																																																																																																																																																																																																																		
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)																																																																																																																																																																																																																				
15 min Summer	115.731	0.0	19																																																																																																																																																																																																																				
30 min Summer	77.804	0.0	33																																																																																																																																																																																																																				
60 min Summer	49.937	0.0	62																																																																																																																																																																																																																				
120 min Summer	30.956	0.0	122																																																																																																																																																																																																																				
180 min Summer	23.058	0.0	182																																																																																																																																																																																																																				
240 min Summer	18.577	0.0	240																																																																																																																																																																																																																				
360 min Summer	13.656	0.0	330																																																																																																																																																																																																																				
480 min Summer	10.974	0.0	386																																																																																																																																																																																																																				
600 min Summer	9.254	0.0	450																																																																																																																																																																																																																				
720 min Summer	8.046	0.0	514																																																																																																																																																																																																																				
960 min Summer	6.447	0.0	654																																																																																																																																																																																																																				
1440 min Summer	4.709	0.0	926																																																																																																																																																																																																																				
2160 min Summer	3.432	0.0	1340																																																																																																																																																																																																																				
2880 min Summer	2.739	0.0	1732																																																																																																																																																																																																																				
4320 min Summer	1.989	0.0	2512																																																																																																																																																																																																																				
5760 min Summer	1.583	0.0	3288																																																																																																																																																																																																																				
7200 min Summer	1.325	0.0	4032																																																																																																																																																																																																																				
8640 min Summer	1.147	0.0	4760																																																																																																																																																																																																																				
10080 min Summer	1.015	0.0	5456																																																																																																																																																																																																																				
15 min Winter	115.731	0.0	19																																																																																																																																																																																																																				
©1982-2018 Innovyze																																																																																																																																																																																																																							

Paul Basham Associates				Page 2	
Lancaster Court Fareham Hampshire, PO15 5TU		06			
Date 24/04/2019		Designed by JB			
File 06 Plots 22-23. lin100 ...		Checked by AS			
Innovyze		Source Control 2018.1.1			
Summary of Results for 100 year Return Period (+30%)					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	-0.798	0.702	0.1	3.8	O K
60 min Winter	-0.619	0.881	0.1	4.8	O K
120 min Winter	-0.454	1.046	0.1	5.7	O K
180 min Winter	-0.378	1.122	0.1	6.1	O K
240 min Winter	-0.343	1.157	0.1	6.2	O K
360 min Winter	-0.319	1.181	0.1	6.4	O K
480 min Winter	-0.324	1.176	0.1	6.4	O K
600 min Winter	-0.328	1.172	0.1	6.3	O K
720 min Winter	-0.339	1.161	0.1	6.3	O K
960 min Winter	-0.373	1.127	0.1	6.1	O K
1440 min Winter	-0.459	1.041	0.1	5.6	O K
2160 min Winter	-0.586	0.914	0.1	4.9	O K
2880 min Winter	-0.695	0.805	0.1	4.3	O K
4320 min Winter	-0.872	0.628	0.1	3.4	O K
5760 min Winter	-1.007	0.493	0.1	2.7	O K
7200 min Winter	-1.114	0.386	0.1	2.1	O K
8640 min Winter	-1.198	0.302	0.1	1.6	O K
10080 min Winter	-1.266	0.234	0.1	1.3	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	77.804	0.0	33		
60 min Winter	49.937	0.0	62		
120 min Winter	30.956	0.0	120		
180 min Winter	23.058	0.0	178		
240 min Winter	18.577	0.0	234		
360 min Winter	13.656	0.0	342		
480 min Winter	10.974	0.0	432		
600 min Winter	9.254	0.0	470		
720 min Winter	8.046	0.0	548		
960 min Winter	6.447	0.0	702		
1440 min Winter	4.709	0.0	1008		
2160 min Winter	3.432	0.0	1432		
2880 min Winter	2.739	0.0	1848		
4320 min Winter	1.989	0.0	2676		
5760 min Winter	1.583	0.0	3456		
7200 min Winter	1.325	0.0	4184		
8640 min Winter	1.147	0.0	4928		
10080 min Winter	1.015	0.0	5648		
©1982-2018 Innovyze					

Paul Basham Associates		Page 3																																	
Lancaster Court Fareham Hampshire, PO15 5TU	06																																		
Date 24/04/2019	Designed by JB																																		
File 06 Plots 22-23. lin100 ...	Checked by AS																																		
Innovyze		Source Control 2018.1.1																																	
<p style="text-align: center;"><u>Rainfall Details</u></p> <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>19.000</td> <td>Shortest Storm (mins)</td> <td>15</td> </tr> <tr> <td>Ratio R</td> <td>0.350</td> <td>Longest Storm (mins)</td> <td>10080</td> </tr> <tr> <td>Summer Storms</td> <td>Yes</td> <td>Climate Change %</td> <td>+30</td> </tr> </table> <p style="text-align: center;"><u>Time Area Diagram</u></p> <p>Total Area (ha) 0.012</p> <table> <tr> <th colspan="2">Time (mins)</th> <th>Area</th> </tr> <tr> <th>From:</th> <th>To:</th> <th>(ha)</th> </tr> <tr> <td>0</td> <td>4</td> <td>0.012</td> </tr> </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)	19.000	Shortest Storm (mins)	15	Ratio R	0.350	Longest Storm (mins)	10080	Summer Storms	Yes	Climate Change %	+30	Time (mins)		Area	From:	To:	(ha)	0	4	0.012
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)	19.000	Shortest Storm (mins)	15																																
Ratio R	0.350	Longest Storm (mins)	10080																																
Summer Storms	Yes	Climate Change %	+30																																
Time (mins)		Area																																	
From:	To:	(ha)																																	
0	4	0.012																																	
©1982-2018 Innovyze																																			

Paul Basham Associates		Page 4																				
Lancaster Court Fareham Hampshire, PO15 5TU	06																					
Date 24/04/2019	Designed by JB																					
File 06 Plots 22-23. 1in100 ...	Checked by AS																					
Innovyze		Source Control 2018.1.1																				
<p style="text-align: center;"><u>Model Details</u></p> <p style="text-align: center;">Storage is Online Cover Level (m) 0.000</p> <p style="text-align: center;"><u>Trench Soakaway Structure</u></p> <table> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.03499</td> <td>Trench Width (m)</td> <td>1.2</td> </tr> <tr> <td>Infiltration Coefficient Side (m/hr)</td> <td>0.03499</td> <td>Trench Length (m)</td> <td>15.0</td> </tr> <tr> <td>Safety Factor</td> <td>4.0</td> <td>Slope (1:X)</td> <td>0.0</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Cap Volume Depth (m)</td> <td>1.300</td> </tr> <tr> <td>Invert Level (m)</td> <td>-1.500</td> <td>Cap Infiltration Depth (m)</td> <td>1.300</td> </tr> </table>			Infiltration Coefficient Base (m/hr)	0.03499	Trench Width (m)	1.2	Infiltration Coefficient Side (m/hr)	0.03499	Trench Length (m)	15.0	Safety Factor	4.0	Slope (1:X)	0.0	Porosity	0.30	Cap Volume Depth (m)	1.300	Invert Level (m)	-1.500	Cap Infiltration Depth (m)	1.300
Infiltration Coefficient Base (m/hr)	0.03499	Trench Width (m)	1.2																			
Infiltration Coefficient Side (m/hr)	0.03499	Trench Length (m)	15.0																			
Safety Factor	4.0	Slope (1:X)	0.0																			
Porosity	0.30	Cap Volume Depth (m)	1.300																			
Invert Level (m)	-1.500	Cap Infiltration Depth (m)	1.300																			
©1982-2018 Innovyze																						