

Pell Frischmann							Page 1																																																																																																																																																																																																																																																																																	
5 Manchester Square London W1U 3PD			Well St Mill Leek ST13 6BL																																																																																																																																																																																																																																																																																					
Date 19/09/2025 File Attenuation Tank.SRCX			Designed by YL Checked by																																																																																																																																																																																																																																																																																					
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<u>Summary of Results for 100 year Return Period (+40%)</u> Half Drain Time : 37 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 Control (l/s)</th><th>Max E Outflow (l/s)</th><th>Max Volume (m³)</th><th>Status</th></tr><tr><td>15 min Summer</td><td>98.926</td><td>0.526</td><td>0.0</td><td>5.3</td><td>5.3</td><td>14.0</td><td>O K</td></tr><tr><td>30 min Summer</td><td>99.061</td><td>0.661</td><td>0.0</td><td>6.0</td><td>6.0</td><td>17.6</td><td>O K</td></tr><tr><td>60 min Summer</td><td>99.132</td><td>0.732</td><td>0.0</td><td>6.3</td><td>6.3</td><td>19.5</td><td>O K</td></tr><tr><td>120 min Summer</td><td>99.130</td><td>0.730</td><td>0.0</td><td>6.3</td><td>6.3</td><td>19.4</td><td>O K</td></tr><tr><td>180 min Summer</td><td>99.083</td><td>0.683</td><td>0.0</td><td>6.1</td><td>6.1</td><td>18.2</td><td>O K</td></tr><tr><td>240 min Summer</td><td>99.028</td><td>0.628</td><td>0.0</td><td>5.8</td><td>5.8</td><td>16.7</td><td>O K</td></tr><tr><td>360 min Summer</td><td>98.931</td><td>0.531</td><td>0.0</td><td>5.3</td><td>5.3</td><td>14.1</td><td>O K</td></tr><tr><td>480 min Summer</td><td>98.856</td><td>0.456</td><td>0.0</td><td>4.9</td><td>4.9</td><td>12.1</td><td>O K</td></tr><tr><td>600 min Summer</td><td>98.796</td><td>0.396</td><td>0.0</td><td>4.5</td><td>4.5</td><td>10.5</td><td>O K</td></tr><tr><td>720 min Summer</td><td>98.748</td><td>0.348</td><td>0.0</td><td>4.2</td><td>4.2</td><td>9.3</td><td>O K</td></tr><tr><td>960 min Summer</td><td>98.677</td><td>0.277</td><td>0.0</td><td>3.7</td><td>3.7</td><td>7.4</td><td>O K</td></tr><tr><td>1440 min Summer</td><td>98.591</td><td>0.191</td><td>0.0</td><td>3.0</td><td>3.0</td><td>5.1</td><td>O K</td></tr><tr><td>2160 min Summer</td><td>98.529</td><td>0.129</td><td>0.0</td><td>2.4</td><td>2.4</td><td>3.4</td><td>O K</td></tr><tr><td>2880 min Summer</td><td>98.497</td><td>0.097</td><td>0.0</td><td>1.9</td><td>1.9</td><td>2.6</td><td>O K</td></tr><tr><td>4320 min Summer</td><td>98.474</td><td>0.074</td><td>0.0</td><td>1.4</td><td>1.4</td><td>2.0</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>98.464</td><td>0.064</td><td>0.0</td><td>1.2</td><td>1.2</td><td>1.7</td><td>O K</td></tr><tr><td>7200 min Summer</td><td>98.457</td><td>0.057</td><td>0.0</td><td>1.0</td><td>1.0</td><td>1.5</td><td>O K</td></tr><tr><td>8640 min Summer</td><td>98.453</td><td>0.053</td><td>0.0</td><td>0.8</td><td>0.8</td><td>1.4</td><td>O K</td></tr><tr><td>10080 min Summer</td><td>98.449</td><td>0.049</td><td>0.0</td><td>0.8</td><td>0.8</td><td>1.3</td><td>O K</td></tr><tr><td>15 min Winter</td><td>98.993</td><td>0.593</td><td>0.0</td><td>5.6</td><td>5.6</td><td>15.8</td><td>O K</td></tr></table> <table><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Discharge Volume (m³)</th><th>Time-Peak (mins)</th></tr><tr><td>15 min Summer</td><td>116.827</td><td>0.0</td><td>17.9</td><td>21</td></tr><tr><td>30 min Summer</td><td>79.249</td><td>0.0</td><td>24.4</td><td>31</td></tr><tr><td>60 min Summer</td><td>51.407</td><td>0.0</td><td>31.6</td><td>48</td></tr><tr><td>120 min Summer</td><td>32.241</td><td>0.0</td><td>39.6</td><td>82</td></tr><tr><td>180 min Summer</td><td>24.185</td><td>0.0</td><td>44.6</td><td>116</td></tr><tr><td>240 min Summer</td><td>19.581</td><td>0.0</td><td>48.2</td><td>148</td></tr><tr><td>360 min Summer</td><td>14.452</td><td>0.0</td><td>53.3</td><td>212</td></tr><tr><td>480 min Summer</td><td>11.653</td><td>0.0</td><td>57.3</td><td>274</td></tr><tr><td>600 min Summer</td><td>9.852</td><td>0.0</td><td>60.6</td><td>334</td></tr><tr><td>720 min Summer</td><td>8.584</td><td>0.0</td><td>63.3</td><td>394</td></tr><tr><td>960 min Summer</td><td>6.900</td><td>0.0</td><td>67.9</td><td>514</td></tr><tr><td>1440 min Summer</td><td>5.062</td><td>0.0</td><td>74.7</td><td>752</td></tr><tr><td>2160 min Summer</td><td>3.705</td><td>0.0</td><td>82.0</td><td>1108</td></tr><tr><td>2880 min Summer</td><td>2.965</td><td>0.0</td><td>87.5</td><td>1472</td></tr><tr><td>4320 min Summer</td><td>2.161</td><td>0.0</td><td>95.7</td><td>2204</td></tr><tr><td>5760 min Summer</td><td>1.725</td><td>0.0</td><td>101.8</td><td>2928</td></tr><tr><td>7200 min Summer</td><td>1.447</td><td>0.0</td><td>106.8</td><td>3672</td></tr><tr><td>8640 min Summer</td><td>1.255</td><td>0.0</td><td>111.1</td><td>4336</td></tr><tr><td>10080 min Summer</td><td>1.113</td><td>0.0</td><td>115.0</td><td>5008</td></tr><tr><td>15 min Winter</td><td>116.827</td><td>0.0</td><td>20.1</td><td>22</td></tr></table>								Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max E Outflow (l/s)	Max Volume (m³)	Status	15 min Summer	98.926	0.526	0.0	5.3	5.3	14.0	O K	30 min Summer	99.061	0.661	0.0	6.0	6.0	17.6	O K	60 min Summer	99.132	0.732	0.0	6.3	6.3	19.5	O K	120 min Summer	99.130	0.730	0.0	6.3	6.3	19.4	O K	180 min Summer	99.083	0.683	0.0	6.1	6.1	18.2	O K	240 min Summer	99.028	0.628	0.0	5.8	5.8	16.7	O K	360 min Summer	98.931	0.531	0.0	5.3	5.3	14.1	O K	480 min Summer	98.856	0.456	0.0	4.9	4.9	12.1	O K	600 min Summer	98.796	0.396	0.0	4.5	4.5	10.5	O K	720 min Summer	98.748	0.348	0.0	4.2	4.2	9.3	O K	960 min Summer	98.677	0.277	0.0	3.7	3.7	7.4	O K	1440 min Summer	98.591	0.191	0.0	3.0	3.0	5.1	O K	2160 min Summer	98.529	0.129	0.0	2.4	2.4	3.4	O K	2880 min Summer	98.497	0.097	0.0	1.9	1.9	2.6	O K	4320 min Summer	98.474	0.074	0.0	1.4	1.4	2.0	O K	5760 min Summer	98.464	0.064	0.0	1.2	1.2	1.7	O K	7200 min Summer	98.457	0.057	0.0	1.0	1.0	1.5	O K	8640 min Summer	98.453	0.053	0.0	0.8	0.8	1.4	O K	10080 min Summer	98.449	0.049	0.0	0.8	0.8	1.3	O K	15 min Winter	98.993	0.593	0.0	5.6	5.6	15.8	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	15 min Summer	116.827	0.0	17.9	21	30 min Summer	79.249	0.0	24.4	31	60 min Summer	51.407	0.0	31.6	48	120 min Summer	32.241	0.0	39.6	82	180 min Summer	24.185	0.0	44.6	116	240 min Summer	19.581	0.0	48.2	148	360 min Summer	14.452	0.0	53.3	212	480 min Summer	11.653	0.0	57.3	274	600 min Summer	9.852	0.0	60.6	334	720 min Summer	8.584	0.0	63.3	394	960 min Summer	6.900	0.0	67.9	514	1440 min Summer	5.062	0.0	74.7	752	2160 min Summer	3.705	0.0	82.0	1108	2880 min Summer	2.965	0.0	87.5	1472	4320 min Summer	2.161	0.0	95.7	2204	5760 min Summer	1.725	0.0	101.8	2928	7200 min Summer	1.447	0.0	106.8	3672	8640 min Summer	1.255	0.0	111.1	4336	10080 min Summer	1.113	0.0	115.0	5008	15 min Winter	116.827	0.0	20.1	22
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max E Outflow (l/s)	Max Volume (m³)	Status																																																																																																																																																																																																																																																																																	
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Pell Frischmann		Page 2
5 Manchester Square London W1U 3PD	Well St Mill Leek ST13 6BL	
Date 19/09/2025 File Attenuation Tank.SRCX	Designed by YL Checked by	
Innovyze	Source Control 2020.1.3	

Summary of Results for 100 year Return Period (+40%)							
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Outflow (l/s)	Max Volume (m³)	Status
30 min Winter	99.148	0.748	0.0	6.4	6.4	19.9	O K
60 min Winter	99.221	0.821	0.0	6.7	6.7	21.8	O K
120 min Winter	99.192	0.792	0.0	6.6	6.6	21.1	O K
180 min Winter	99.112	0.712	0.0	6.2	6.2	18.9	O K
240 min Winter	99.031	0.631	0.0	5.8	5.8	16.8	O K
360 min Winter	98.896	0.496	0.0	5.1	5.1	13.2	O K
480 min Winter	98.799	0.399	0.0	4.6	4.6	10.6	O K
600 min Winter	98.729	0.329	0.0	4.1	4.1	8.7	O K
720 min Winter	98.676	0.276	0.0	3.7	3.7	7.3	O K
960 min Winter	98.604	0.204	0.0	3.1	3.1	5.4	O K
1440 min Winter	98.531	0.131	0.0	2.4	2.4	3.5	O K
2160 min Winter	98.486	0.086	0.0	1.8	1.8	2.3	O K
2880 min Winter	98.474	0.074	0.0	1.4	1.4	2.0	O K
4320 min Winter	98.460	0.060	0.0	1.1	1.1	1.6	O K
5760 min Winter	98.452	0.052	0.0	0.8	0.8	1.4	O K
7200 min Winter	98.447	0.047	0.0	0.7	0.7	1.3	O K
8640 min Winter	98.443	0.043	0.0	0.6	0.6	1.1	O K
10080 min Winter	98.439	0.039	0.0	0.5	0.5	1.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
30 min Winter	79.249	0.0	27.3	32
60 min Winter	51.407	0.0	35.4	52
120 min Winter	32.241	0.0	44.4	88
180 min Winter	24.185	0.0	50.0	124
240 min Winter	19.581	0.0	53.9	156
360 min Winter	14.452	0.0	59.7	222
480 min Winter	11.653	0.0	64.2	284
600 min Winter	9.852	0.0	67.8	344
720 min Winter	8.584	0.0	70.9	404
960 min Winter	6.900	0.0	76.0	520
1440 min Winter	5.062	0.0	83.7	756
2160 min Winter	3.705	0.0	91.9	1108
2880 min Winter	2.965	0.0	98.0	1468
4320 min Winter	2.161	0.0	107.2	2164
5760 min Winter	1.725	0.0	114.0	2936
7200 min Winter	1.447	0.0	119.6	3560
8640 min Winter	1.255	0.0	124.5	4360
10080 min Winter	1.113	0.0	128.8	5000

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Pell Frischmann		Page 3
5 Manchester Square London W1U 3PD	Well St Mill Leek ST13 6BL	
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File Attenuation Tank.SRCX	Checked by	
Innovyze		Source Control 2020.1.3

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)	18.200	Shortest Storm (mins)	15
Ratio R	0.333	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.082

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From:	To:	From:	To:	From:	To:
0	4	0.027	4	8	0.027
				8	12
					0.027

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Pell Frischmann		Page 4																		
5 Manchester Square London W1U 3PD	Well St Mill Leek ST13 6BL																			
Date 19/09/2025 File Attenuation Tank.SRCX	Designed by YL Checked by																			
Innovyze		Source Control 2020.1.3																		
<u>Model Details</u> Storage is Online Cover Level (m) 100.000 <u>Cellular Storage Structure</u> Invert Level (m) 98.400 Safety Factor 2.0 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95 Infiltration Coefficient Side (m/hr) 0.00000 <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Depth (m)</th> <th>Area (m²)</th> <th>Inf. Area (m²)</th> <th>Depth (m)</th> <th>Area (m²)</th> <th>Inf. Area (m²)</th> </tr> </thead> <tbody> <tr> <td>0.000</td> <td>28.0</td> <td>28.0</td> <td>0.841</td> <td>0.0</td> <td>46.4</td> </tr> <tr> <td>0.840</td> <td>28.0</td> <td>46.4</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <u>Orifice Outflow Control</u> Diameter (m) 0.060 Discharge Coefficient 0.600 Invert Level (m) 98.400			Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	0.000	28.0	28.0	0.841	0.0	46.4	0.840	28.0	46.4			
Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)															
0.000	28.0	28.0	0.841	0.0	46.4															
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