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<u>Summary of Results for 2 year Return Period</u> Half Drain Time : 5 minutes. <table><thead><tr><th>Storm Event</th><th>Max Level (m)</th><th>Max Depth (m)</th><th>Max Infiltration (1/s)</th><th>Max Control (1/s)</th><th>Max Σ Outflow (1/s)</th><th>Max Volume (m³)</th><th>Status</th></tr></thead><tbody><tr><td>15 min Summer</td><td>61.084</td><td>0.034</td><td>0.0</td><td>1.4</td><td>1.4</td><td>0.3</td><td>O K</td></tr><tr><td>30 min Summer</td><td>61.097</td><td>0.047</td><td>0.0</td><td>1.5</td><td>1.5</td><td>0.5</td><td>O K</td></tr><tr><td>60 min Summer</td><td>61.101</td><td>0.051</td><td>0.0</td><td>1.5</td><td>1.5</td><td>0.6</td><td>O K</td></tr><tr><td>120 min Summer</td><td>61.097</td><td>0.047</td><td>0.0</td><td>1.5</td><td>1.5</td><td>0.5</td><td>O K</td></tr><tr><td>180 min Summer</td><td>61.087</td><td>0.037</td><td>0.0</td><td>1.4</td><td>1.4</td><td>0.3</td><td>O K</td></tr><tr><td>240 min Summer</td><td>61.076</td><td>0.026</td><td>0.0</td><td>1.3</td><td>1.3</td><td>0.2</td><td>O K</td></tr><tr><td>360 min Summer</td><td>61.059</td><td>0.009</td><td>0.0</td><td>1.1</td><td>1.1</td><td>0.0</td><td>O K</td></tr><tr><td>480 min Summer</td><td>61.050</td><td>0.000</td><td>0.0</td><td>0.9</td><td>0.9</td><td>0.0</td><td>O K</td></tr><tr><td>600 min Summer</td><td>61.050</td><td>0.000</td><td>0.0</td><td>0.8</td><td>0.8</td><td>0.0</td><td>O K</td></tr><tr><td>720 min Summer</td><td>61.050</td><td>0.000</td><td>0.0</td><td>0.7</td><td>0.7</td><td>0.0</td><td>O K</td></tr><tr><td>960 min Summer</td><td>61.050</td><td>0.000</td><td>0.0</td><td>0.6</td><td>0.6</td><td>0.0</td><td>O K</td></tr><tr><td>1440 min Summer</td><td>61.050</td><td>0.000</td><td>0.0</td><td>0.4</td><td>0.4</td><td>0.0</td><td>O K</td></tr><tr><td>2160 min Summer</td><td>61.050</td><td>0.000</td><td>0.0</td><td>0.3</td><td>0.3</td><td>0.0</td><td>O K</td></tr><tr><td>2880 min Summer</td><td>61.050</td><td>0.000</td><td>0.0</td><td>0.3</td><td>0.3</td><td>0.0</td><td>O K</td></tr><tr><td>4320 min Summer</td><td>61.050</td><td>0.000</td><td>0.0</td><td>0.2</td><td>0.2</td><td>0.0</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>61.050</td><td>0.000</td><td>0.0</td><td>0.2</td><td>0.2</td><td>0.0</td><td>O K</td></tr><tr><td>7200 min Summer</td><td>61.050</td><td>0.000</td><td>0.0</td><td>0.1</td><td>0.1</td><td>0.0</td><td>O K</td></tr><tr><td>8640 min Summer</td><td>61.050</td><td>0.000</td><td>0.0</td><td>0.1</td><td>0.1</td><td>0.0</td><td>O K</td></tr><tr><td>10080 min Summer</td><td>61.050</td><td>0.000</td><td>0.0</td><td>0.1</td><td>0.1</td><td>0.0</td><td>O K</td></tr><tr><td>15 min Winter</td><td>61.092</td><td>0.042</td><td>0.0</td><td>1.4</td><td>1.4</td><td>0.4</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>Discharge Volume (m³)</th><th>Time-Peak 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Summer</td><td>1.551</td><td>0.0</td><td>7.5</td><td>0</td></tr><tr><td>2160 min Summer</td><td>1.160</td><td>0.0</td><td>8.2</td><td>0</td></tr><tr><td>2880 min Summer</td><td>0.944</td><td>0.0</td><td>8.7</td><td>0</td></tr><tr><td>4320 min Summer</td><td>0.706</td><td>0.0</td><td>9.3</td><td>0</td></tr><tr><td>5760 min Summer</td><td>0.574</td><td>0.0</td><td>9.6</td><td>0</td></tr><tr><td>7200 min Summer</td><td>0.490</td><td>0.0</td><td>9.7</td><td>0</td></tr><tr><td>8640 min Summer</td><td>0.430</td><td>0.0</td><td>9.6</td><td>0</td></tr><tr><td>10080 min Summer</td><td>0.385</td><td>0.0</td><td>9.5</td><td>0</td></tr><tr><td>15 min Winter</td><td>34.686</td><td>0.0</td><td>1.1</td><td>20</td></tr></tbody></table>								Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (1/s)	Max Control (1/s)	Max Σ Outflow (1/s)	Max Volume (m³)	Status	15 min Summer	61.084	0.034	0.0	1.4	1.4	0.3	O K	30 min Summer	61.097	0.047	0.0	1.5	1.5	0.5	O K	60 min Summer	61.101	0.051	0.0	1.5	1.5	0.6	O K	120 min Summer	61.097	0.047	0.0	1.5	1.5	0.5	O K	180 min Summer	61.087	0.037	0.0	1.4	1.4	0.3	O K	240 min Summer	61.076	0.026	0.0	1.3	1.3	0.2	O K	360 min Summer	61.059	0.009	0.0	1.1	1.1	0.0	O K	480 min Summer	61.050	0.000	0.0	0.9	0.9	0.0	O K	600 min Summer	61.050	0.000	0.0	0.8	0.8	0.0	O K	720 min Summer	61.050	0.000	0.0	0.7	0.7	0.0	O K	960 min Summer	61.050	0.000	0.0	0.6	0.6	0.0	O K	1440 min Summer	61.050	0.000	0.0	0.4	0.4	0.0	O K	2160 min Summer	61.050	0.000	0.0	0.3	0.3	0.0	O K	2880 min Summer	61.050	0.000	0.0	0.3	0.3	0.0	O K	4320 min Summer	61.050	0.000	0.0	0.2	0.2	0.0	O K	5760 min Summer	61.050	0.000	0.0	0.2	0.2	0.0	O K	7200 min Summer	61.050	0.000	0.0	0.1	0.1	0.0	O K	8640 min Summer	61.050	0.000	0.0	0.1	0.1	0.0	O K	10080 min Summer	61.050	0.000	0.0	0.1	0.1	0.0	O K	15 min Winter	61.092	0.042	0.0	1.4	1.4	0.4	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	15 min Summer	34.686	0.0	0.8	20	30 min Summer	22.843	0.0	1.6	28	60 min Summer	14.508	0.0	2.3	44	120 min Summer	9.031	0.0	3.2	74	180 min Summer	6.810	0.0	3.8	104	240 min Summer	5.567	0.0	4.3	132	360 min Summer	4.185	0.0	4.9	190	480 min Summer	3.407	0.0	5.4	0	600 min Summer	2.904	0.0	5.8	0	720 min Summer	2.549	0.0	6.2	0	960 min Summer	2.074	0.0	6.7	0	1440 min Summer	1.551	0.0	7.5	0	2160 min Summer	1.160	0.0	8.2	0	2880 min Summer	0.944	0.0	8.7	0	4320 min Summer	0.706	0.0	9.3	0	5760 min Summer	0.574	0.0	9.6	0	7200 min Summer	0.490	0.0	9.7	0	8640 min Summer	0.430	0.0	9.6	0	10080 min Summer	0.385	0.0	9.5	0	15 min Winter	34.686	0.0	1.1	20
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Winter</td><td>61.050</td><td>0.000</td><td>0.0</td><td>0.1</td><td>0.1</td><td>0.0</td><td>O K</td></tr><tr><td>7200 min Winter</td><td>61.050</td><td>0.000</td><td>0.0</td><td>0.1</td><td>0.1</td><td>0.0</td><td>O K</td></tr><tr><td>8640 min Winter</td><td>61.050</td><td>0.000</td><td>0.0</td><td>0.1</td><td>0.1</td><td>0.0</td><td>O K</td></tr><tr><td>10080 min Winter</td><td>61.050</td><td>0.000</td><td>0.0</td><td>0.1</td><td>0.1</td><td>0.0</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>30 min Winter</td><td>22.843</td><td>0.0</td><td>1.9</td><td>29</td></tr><tr><td>60 min Winter</td><td>14.508</td><td>0.0</td><td>2.7</td><td>46</td></tr><tr><td>120 min Winter</td><td>9.031</td><td>0.0</td><td>3.8</td><td>76</td></tr><tr><td>180 min Winter</td><td>6.810</td><td>0.0</td><td>4.4</td><td>104</td></tr><tr><td>240 min Winter</td><td>5.567</td><td>0.0</td><td>5.0</td><td>130</td></tr><tr><td>360 min Winter</td><td>4.185</td><td>0.0</td><td>5.7</td><td>0</td></tr><tr><td>480 min Winter</td><td>3.407</td><td>0.0</td><td>6.3</td><td>0</td></tr><tr><td>600 min Winter</td><td>2.904</td><td>0.0</td><td>6.7</td><td>0</td></tr><tr><td>720 min Winter</td><td>2.549</td><td>0.0</td><td>7.1</td><td>0</td></tr><tr><td>960 min Winter</td><td>2.074</td><td>0.0</td><td>7.7</td><td>0</td></tr><tr><td>1440 min Winter</td><td>1.551</td><td>0.0</td><td>8.6</td><td>0</td></tr><tr><td>2160 min Winter</td><td>1.160</td><td>0.0</td><td>9.6</td><td>0</td></tr><tr><td>2880 min Winter</td><td>0.944</td><td>0.0</td><td>10.2</td><td>0</td></tr><tr><td>4320 min Winter</td><td>0.706</td><td>0.0</td><td>11.0</td><td>0</td></tr><tr><td>5760 min Winter</td><td>0.574</td><td>0.0</td><td>11.4</td><td>0</td></tr><tr><td>7200 min Winter</td><td>0.490</td><td>0.0</td><td>11.6</td><td>0</td></tr><tr><td>8640 min Winter</td><td>0.430</td><td>0.0</td><td>11.8</td><td>0</td></tr><tr><td>10080 min Winter</td><td>0.385</td><td>0.0</td><td>11.8</td><td>0</td></tr></table>				Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status	30 min Winter	61.104	0.054	0.0	1.5	1.5	0.7	O K	60 min Winter	61.104	0.054	0.0	1.5	1.5	0.7	O K	120 min Winter	61.092	0.042	0.0	1.4	1.4	0.4	O K	180 min Winter	61.074	0.024	0.0	1.3	1.3	0.1	O K	240 min Winter	61.059	0.009	0.0	1.1	1.1	0.0	O K	360 min Winter	61.050	0.000	0.0	0.8	0.8	0.0	O K	480 min Winter	61.050	0.000	0.0	0.7	0.7	0.0	O K	600 min Winter	61.050	0.000	0.0	0.6	0.6	0.0	O K	720 min Winter	61.050	0.000	0.0	0.5	0.5	0.0	O K	960 min Winter	61.050	0.000	0.0	0.4	0.4	0.0	O K	1440 min Winter	61.050	0.000	0.0	0.3	0.3	0.0	O K	2160 min Winter	61.050	0.000	0.0	0.2	0.2	0.0	O K	2880 min Winter	61.050	0.000	0.0	0.2	0.2	0.0	O K	4320 min Winter	61.050	0.000	0.0	0.1	0.1	0.0	O K	5760 min Winter	61.050	0.000	0.0	0.1	0.1	0.0	O K	7200 min Winter	61.050	0.000	0.0	0.1	0.1	0.0	O K	8640 min Winter	61.050	0.000	0.0	0.1	0.1	0.0	O K	10080 min Winter	61.050	0.000	0.0	0.1	0.1	0.0	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	30 min Winter	22.843	0.0	1.9	29	60 min Winter	14.508	0.0	2.7	46	120 min Winter	9.031	0.0	3.8	76	180 min Winter	6.810	0.0	4.4	104	240 min Winter	5.567	0.0	5.0	130	360 min Winter	4.185	0.0	5.7	0	480 min Winter	3.407	0.0	6.3	0	600 min Winter	2.904	0.0	6.7	0	720 min Winter	2.549	0.0	7.1	0	960 min Winter	2.074	0.0	7.7	0	1440 min Winter	1.551	0.0	8.6	0	2160 min Winter	1.160	0.0	9.6	0	2880 min Winter	0.944	0.0	10.2	0	4320 min Winter	0.706	0.0	11.0	0	5760 min Winter	0.574	0.0	11.4	0	7200 min Winter	0.490	0.0	11.6	0	8640 min Winter	0.430	0.0	11.8	0	10080 min Winter	0.385	0.0	11.8	0
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HBL Associates		Page 4
Brook House Weybrook Road Stockport, M19 2QD	9883 Car Park Subvoid Design v1.0	
Date 24/01/2023 12:23 File 9883 - Car Park Subvoid...	Designed by HBL Checked by	
Innovyze	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 61.525

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	16.0
Membrane Percolation (mm/hr)	1000	Length (m)	18.0
Max Percolation (l/s)	80.0	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	61.050	Membrane Depth (m)	300

Orifice Outflow Control

Diameter (m) 0.049 Discharge Coefficient 0.600 Invert Level (m) 60.985

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HBL Associates			Page 1																																																																																																																																																																																																																																																																																				
Brook House Weybrook Road Stockport, M19 2QD		9883 Car Park Subvoid Design v2.0																																																																																																																																																																																																																																																																																					
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<u>Summary of Results for 30 year Return Period</u> Half Drain Time : 17 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 Σ Outflow (l/s)</th><th>Max Volume (m³)</th><th>Status</th></tr><tr><td>15 min Summer</td><td>61.134</td><td>0.084</td><td>0.0</td><td>1.8</td><td>1.8</td><td>1.7</td><td>O K</td></tr><tr><td>30 min Summer</td><td>61.150</td><td>0.100</td><td>0.0</td><td>1.9</td><td>1.9</td><td>2.4</td><td>O K</td></tr><tr><td>60 min Summer</td><td>61.156</td><td>0.106</td><td>0.0</td><td>1.9</td><td>1.9</td><td>2.7</td><td>O K</td></tr><tr><td>120 min Summer</td><td>61.151</td><td>0.101</td><td>0.0</td><td>1.9</td><td>1.9</td><td>2.5</td><td>O K</td></tr><tr><td>180 min Summer</td><td>61.140</td><td>0.090</td><td>0.0</td><td>1.8</td><td>1.8</td><td>2.0</td><td>O K</td></tr><tr><td>240 min Summer</td><td>61.129</td><td>0.079</td><td>0.0</td><td>1.7</td><td>1.7</td><td>1.5</td><td>O K</td></tr><tr><td>360 min Summer</td><td>61.110</td><td>0.060</td><td>0.0</td><td>1.6</td><td>1.6</td><td>0.9</td><td>O K</td></tr><tr><td>480 min Summer</td><td>61.094</td><td>0.044</td><td>0.0</td><td>1.5</td><td>1.5</td><td>0.5</td><td>O K</td></tr><tr><td>600 min Summer</td><td>61.081</td><td>0.031</td><td>0.0</td><td>1.3</td><td>1.3</td><td>0.2</td><td>O K</td></tr><tr><td>720 min Summer</td><td>61.069</td><td>0.019</td><td>0.0</td><td>1.2</td><td>1.2</td><td>0.1</td><td>O K</td></tr><tr><td>960 min Summer</td><td>61.053</td><td>0.003</td><td>0.0</td><td>1.0</td><td>1.0</td><td>0.0</td><td>O K</td></tr><tr><td>1440 min Summer</td><td>61.050</td><td>0.000</td><td>0.0</td><td>0.8</td><td>0.8</td><td>0.0</td><td>O K</td></tr><tr><td>2160 min Summer</td><td>61.050</td><td>0.000</td><td>0.0</td><td>0.6</td><td>0.6</td><td>0.0</td><td>O K</td></tr><tr><td>2880 min Summer</td><td>61.050</td><td>0.000</td><td>0.0</td><td>0.4</td><td>0.4</td><td>0.0</td><td>O K</td></tr><tr><td>4320 min Summer</td><td>61.050</td><td>0.000</td><td>0.0</td><td>0.3</td><td>0.3</td><td>0.0</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>61.050</td><td>0.000</td><td>0.0</td><td>0.3</td><td>0.3</td><td>0.0</td><td>O K</td></tr><tr><td>7200 min Summer</td><td>61.050</td><td>0.000</td><td>0.0</td><td>0.2</td><td>0.2</td><td>0.0</td><td>O K</td></tr><tr><td>8640 min Summer</td><td>61.050</td><td>0.000</td><td>0.0</td><td>0.2</td><td>0.2</td><td>0.0</td><td>O K</td></tr><tr><td>10080 min Summer</td><td>61.050</td><td>0.000</td><td>0.0</td><td>0.2</td><td>0.2</td><td>0.0</td><td>O K</td></tr><tr><td>15 min Winter</td><td>61.144</td><td>0.094</td><td>0.0</td><td>1.8</td><td>1.8</td><td>2.1</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>65.562</td><td>0.0</td><td>2.9</td><td>21</td></tr><tr><td>30 min Summer</td><td>43.485</td><td>0.0</td><td>4.3</td><td>30</td></tr><tr><td>60 min Summer</td><td>27.653</td><td>0.0</td><td>5.8</td><td>46</td></tr><tr><td>120 min Summer</td><td>17.097</td><td>0.0</td><td>7.4</td><td>80</td></tr><tr><td>180 min Summer</td><td>12.773</td><td>0.0</td><td>8.5</td><td>110</td></tr><tr><td>240 min Summer</td><td>10.341</td><td>0.0</td><td>9.3</td><td>142</td></tr><tr><td>360 min Summer</td><td>7.633</td><td>0.0</td><td>10.4</td><td>200</td></tr><tr><td>480 min Summer</td><td>6.154</td><td>0.0</td><td>11.2</td><td>258</td></tr><tr><td>600 min Summer</td><td>5.204</td><td>0.0</td><td>11.9</td><td>316</td></tr><tr><td>720 min Summer</td><td>4.536</td><td>0.0</td><td>12.4</td><td>374</td></tr><tr><td>960 min Summer</td><td>3.649</td><td>0.0</td><td>13.3</td><td>488</td></tr><tr><td>1440 min Summer</td><td>2.683</td><td>0.0</td><td>14.6</td><td>0</td></tr><tr><td>2160 min Summer</td><td>1.969</td><td>0.0</td><td>15.9</td><td>0</td></tr><tr><td>2880 min Summer</td><td>1.580</td><td>0.0</td><td>16.7</td><td>0</td></tr><tr><td>4320 min Summer</td><td>1.158</td><td>0.0</td><td>17.8</td><td>0</td></tr><tr><td>5760 min Summer</td><td>0.928</td><td>0.0</td><td>18.5</td><td>0</td></tr><tr><td>7200 min Summer</td><td>0.781</td><td>0.0</td><td>18.8</td><td>0</td></tr><tr><td>8640 min Summer</td><td>0.678</td><td>0.0</td><td>19.0</td><td>0</td></tr><tr><td>10080 min Summer</td><td>0.602</td><td>0.0</td><td>19.0</td><td>0</td></tr><tr><td>15 min Winter</td><td>65.562</td><td>0.0</td><td>3.4</td><td>21</td></tr></table>							Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status	15 min Summer	61.134	0.084	0.0	1.8	1.8	1.7	O K	30 min Summer	61.150	0.100	0.0	1.9	1.9	2.4	O K	60 min Summer	61.156	0.106	0.0	1.9	1.9	2.7	O K	120 min Summer	61.151	0.101	0.0	1.9	1.9	2.5	O K	180 min Summer	61.140	0.090	0.0	1.8	1.8	2.0	O K	240 min Summer	61.129	0.079	0.0	1.7	1.7	1.5	O K	360 min Summer	61.110	0.060	0.0	1.6	1.6	0.9	O K	480 min Summer	61.094	0.044	0.0	1.5	1.5	0.5	O K	600 min Summer	61.081	0.031	0.0	1.3	1.3	0.2	O K	720 min Summer	61.069	0.019	0.0	1.2	1.2	0.1	O K	960 min Summer	61.053	0.003	0.0	1.0	1.0	0.0	O K	1440 min Summer	61.050	0.000	0.0	0.8	0.8	0.0	O K	2160 min Summer	61.050	0.000	0.0	0.6	0.6	0.0	O K	2880 min Summer	61.050	0.000	0.0	0.4	0.4	0.0	O K	4320 min Summer	61.050	0.000	0.0	0.3	0.3	0.0	O K	5760 min Summer	61.050	0.000	0.0	0.3	0.3	0.0	O K	7200 min Summer	61.050	0.000	0.0	0.2	0.2	0.0	O K	8640 min Summer	61.050	0.000	0.0	0.2	0.2	0.0	O K	10080 min Summer	61.050	0.000	0.0	0.2	0.2	0.0	O K	15 min Winter	61.144	0.094	0.0	1.8	1.8	2.1	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	15 min Summer	65.562	0.0	2.9	21	30 min Summer	43.485	0.0	4.3	30	60 min Summer	27.653	0.0	5.8	46	120 min Summer	17.097	0.0	7.4	80	180 min Summer	12.773	0.0	8.5	110	240 min Summer	10.341	0.0	9.3	142	360 min Summer	7.633	0.0	10.4	200	480 min Summer	6.154	0.0	11.2	258	600 min Summer	5.204	0.0	11.9	316	720 min Summer	4.536	0.0	12.4	374	960 min Summer	3.649	0.0	13.3	488	1440 min Summer	2.683	0.0	14.6	0	2160 min Summer	1.969	0.0	15.9	0	2880 min Summer	1.580	0.0	16.7	0	4320 min Summer	1.158	0.0	17.8	0	5760 min Summer	0.928	0.0	18.5	0	7200 min Summer	0.781	0.0	18.8	0	8640 min Summer	0.678	0.0	19.0	0	10080 min Summer	0.602	0.0	19.0	0	15 min Winter	65.562	0.0	3.4	21
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status																																																																																																																																																																																																																																																																																
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<u>Summary of Results for 30 year Return Period</u> <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 Σ Outflow (l/s)</th><th>Max Volume (m³)</th><th>Status</th></tr><tr><td>30 min Winter</td><td>61.160</td><td>0.110</td><td>0.0</td><td>1.9</td><td>1.9</td><td>2.9</td><td>O K</td></tr><tr><td>60 min Winter</td><td>61.163</td><td>0.113</td><td>0.0</td><td>2.0</td><td>2.0</td><td>3.1</td><td>O K</td></tr><tr><td>120 min Winter</td><td>61.152</td><td>0.102</td><td>0.0</td><td>1.9</td><td>1.9</td><td>2.5</td><td>O K</td></tr><tr><td>180 min Winter</td><td>61.136</td><td>0.086</td><td>0.0</td><td>1.8</td><td>1.8</td><td>1.8</td><td>O K</td></tr><tr><td>240 min Winter</td><td>61.119</td><td>0.069</td><td>0.0</td><td>1.7</td><td>1.7</td><td>1.1</td><td>O K</td></tr><tr><td>360 min Winter</td><td>61.091</td><td>0.041</td><td>0.0</td><td>1.4</td><td>1.4</td><td>0.4</td><td>O K</td></tr><tr><td>480 min 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Winter</td><td>10.341</td><td>0.0</td><td>10.5</td><td>146</td></tr><tr><td>360 min Winter</td><td>7.633</td><td>0.0</td><td>11.8</td><td>202</td></tr><tr><td>480 min Winter</td><td>6.154</td><td>0.0</td><td>12.7</td><td>256</td></tr><tr><td>600 min Winter</td><td>5.204</td><td>0.0</td><td>13.5</td><td>306</td></tr><tr><td>720 min Winter</td><td>4.536</td><td>0.0</td><td>14.1</td><td>0</td></tr><tr><td>960 min Winter</td><td>3.649</td><td>0.0</td><td>15.2</td><td>0</td></tr><tr><td>1440 min Winter</td><td>2.683</td><td>0.0</td><td>16.6</td><td>0</td></tr><tr><td>2160 min Winter</td><td>1.969</td><td>0.0</td><td>18.1</td><td>0</td></tr><tr><td>2880 min Winter</td><td>1.580</td><td>0.0</td><td>19.2</td><td>0</td></tr><tr><td>4320 min Winter</td><td>1.158</td><td>0.0</td><td>20.5</td><td>0</td></tr><tr><td>5760 min Winter</td><td>0.928</td><td>0.0</td><td>21.3</td><td>0</td></tr><tr><td>7200 min Winter</td><td>0.781</td><td>0.0</td><td>21.9</td><td>0</td></tr><tr><td>8640 min Winter</td><td>0.678</td><td>0.0</td><td>22.2</td><td>0</td></tr><tr><td>10080 min Winter</td><td>0.602</td><td>0.0</td><td>22.4</td><td>0</td></tr></table>								Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status	30 min Winter	61.160	0.110	0.0	1.9	1.9	2.9	O K	60 min Winter	61.163	0.113	0.0	2.0	2.0	3.1	O K	120 min Winter	61.152	0.102	0.0	1.9	1.9	2.5	O K	180 min Winter	61.136	0.086	0.0	1.8	1.8	1.8	O K	240 min Winter	61.119	0.069	0.0	1.7	1.7	1.1	O K	360 min Winter	61.091	0.041	0.0	1.4	1.4	0.4	O K	480 min Winter	61.070	0.020	0.0	1.2	1.2	0.1	O K	600 min Winter	61.055	0.005	0.0	1.1	1.1	0.0	O K	720 min Winter	61.050	0.000	0.0	0.9	0.9	0.0	O K	960 min Winter	61.050	0.000	0.0	0.7	0.7	0.0	O K	1440 min Winter	61.050	0.000	0.0	0.5	0.5	0.0	O K	2160 min Winter	61.050	0.000	0.0	0.4	0.4	0.0	O K	2880 min Winter	61.050	0.000	0.0	0.3	0.3	0.0	O K	4320 min Winter	61.050	0.000	0.0	0.2	0.2	0.0	O K	5760 min Winter	61.050	0.000	0.0	0.2	0.2	0.0	O K	7200 min Winter	61.050	0.000	0.0	0.2	0.2	0.0	O K	8640 min Winter	61.050	0.000	0.0	0.1	0.1	0.0	O K	10080 min Winter	61.050	0.000	0.0	0.1	0.1	0.0	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	30 min Winter	43.485	0.0	5.0	31	60 min Winter	27.653	0.0	6.6	50	120 min Winter	17.097	0.0	8.6	84	180 min Winter	12.773	0.0	9.7	116	240 min Winter	10.341	0.0	10.5	146	360 min Winter	7.633	0.0	11.8	202	480 min Winter	6.154	0.0	12.7	256	600 min Winter	5.204	0.0	13.5	306	720 min Winter	4.536	0.0	14.1	0	960 min Winter	3.649	0.0	15.2	0	1440 min Winter	2.683	0.0	16.6	0	2160 min Winter	1.969	0.0	18.1	0	2880 min Winter	1.580	0.0	19.2	0	4320 min Winter	1.158	0.0	20.5	0	5760 min Winter	0.928	0.0	21.3	0	7200 min Winter	0.781	0.0	21.9	0	8640 min Winter	0.678	0.0	22.2	0	10080 min Winter	0.602	0.0	22.4	0
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status																																																																																																																																																																																																																																																							
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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	30	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.000	Shortest Storm (mins)	15
Ratio R	0.359	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.035

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From: To: (ha)		From: To: (ha)		From: To: (ha)	
0 4 0.012		4 8 0.012		8 12 0.012	

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Model Details

Storage is Online Cover Level (m) 61.525

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	16.0
Membrane Percolation (mm/hr)	1000	Length (m)	18.0
Max Percolation (l/s)	80.0	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	61.050	Membrane Depth (m)	300

Orifice Outflow Control

Diameter (m) 0.049 Discharge Coefficient 0.600 Invert Level (m) 60.985

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Weybrook Road

Stockport, M19 2QD

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 35 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	61.189	0.139	0.0	2.1	2.1	4.6	O K
30 min Summer	61.211	0.161	0.0	2.3	2.3	6.2	O K
60 min Summer	61.221	0.171	0.0	2.3	2.3	7.0	O K
120 min Summer	61.219	0.169	0.0	2.3	2.3	6.9	O K
180 min Summer	61.211	0.161	0.0	2.2	2.2	6.2	O K
240 min Summer	61.201	0.151	0.0	2.2	2.2	5.5	O K
360 min Summer	61.181	0.131	0.0	2.1	2.1	4.1	O K
480 min Summer	61.164	0.114	0.0	2.0	2.0	3.1	O K
600 min Summer	61.148	0.098	0.0	1.9	1.9	2.3	O K
720 min Summer	61.134	0.084	0.0	1.8	1.8	1.7	O K
960 min Summer	61.111	0.061	0.0	1.6	1.6	0.9	O K
1440 min Summer	61.078	0.028	0.0	1.3	1.3	0.2	O K
2160 min Summer	61.052	0.002	0.0	1.0	1.0	0.0	O K
2880 min Summer	61.050	0.000	0.0	0.8	0.8	0.0	O K
4320 min Summer	61.050	0.000	0.0	0.6	0.6	0.0	O K
5760 min Summer	61.050	0.000	0.0	0.4	0.4	0.0	O K
7200 min Summer	61.050	0.000	0.0	0.4	0.4	0.0	O K
8640 min Summer	61.050	0.000	0.0	0.3	0.3	0.0	O K
10080 min Summer	61.050	0.000	0.0	0.3	0.3	0.0	O K
15 min Winter	61.201	0.151	0.0	2.2	2.2	5.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	118.498	0.0	6.3	21
30 min Summer	79.373	0.0	8.9	32
60 min Summer	50.812	0.0	11.8	50
120 min Summer	31.483	0.0	15.0	84
180 min Summer	23.483	0.0	17.0	118
240 min Summer	18.956	0.0	18.3	150
360 min Summer	13.897	0.0	20.2	214
480 min Summer	11.157	0.0	21.7	274
600 min Summer	9.402	0.0	22.9	334
720 min Summer	8.170	0.0	23.9	392
960 min Summer	6.541	0.0	25.5	508
1440 min Summer	4.773	0.0	27.8	738
2160 min Summer	3.476	0.0	30.1	1072
2880 min Summer	2.772	0.0	31.8	0
4320 min Summer	2.011	0.0	34.0	0
5760 min Summer	1.600	0.0	35.4	0
7200 min Summer	1.339	0.0	36.4	0
8640 min Summer	1.157	0.0	37.1	0
10080 min Summer	1.023	0.0	37.6	0
15 min Winter	118.498	0.0	7.2	22

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<u>Summary of Results for 100 year Return Period (+40%)</u>							
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
30 min Winter	61.224	0.174		0.0	2.3	7.3	O K
60 min Winter	61.234	0.184		0.0	2.4	8.1	O K
120 min Winter	61.229	0.179		0.0	2.3	7.7	O K
180 min Winter	61.216	0.166		0.0	2.3	6.6	O K
240 min Winter	61.201	0.151		0.0	2.2	5.5	O K
360 min Winter	61.172	0.122		0.0	2.0	3.6	O K
480 min Winter	61.147	0.097		0.0	1.9	2.3	O K
600 min Winter	61.125	0.075		0.0	1.7	1.4	O K
720 min Winter	61.107	0.057		0.0	1.6	0.8	O K
960 min Winter	61.079	0.029		0.0	1.3	0.2	O K
1440 min Winter	61.051	0.001		0.0	1.0	0.0	O K
2160 min Winter	61.050	0.000		0.0	0.7	0.0	O K
2880 min Winter	61.050	0.000		0.0	0.6	0.0	O K
4320 min Winter	61.050	0.000		0.0	0.4	0.0	O K
5760 min Winter	61.050	0.000		0.0	0.3	0.0	O K
7200 min Winter	61.050	0.000		0.0	0.3	0.0	O K
8640 min Winter	61.050	0.000		0.0	0.2	0.0	O K
10080 min Winter	61.050	0.000		0.0	0.2	0.0	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)			
30 min Winter	79.373	0.0	10.2	33			
60 min Winter	50.812	0.0	13.4	54			
120 min Winter	31.483	0.0	16.9	90			
180 min Winter	23.483	0.0	19.2	126			
240 min Winter	18.956	0.0	20.7	160			
360 min Winter	13.897	0.0	22.8	224			
480 min Winter	11.157	0.0	24.5	282			
600 min Winter	9.402	0.0	25.8	340			
720 min Winter	8.170	0.0	26.9	394			
960 min Winter	6.541	0.0	28.8	502			
1440 min Winter	4.773	0.0	31.4	724			
2160 min Winter	3.476	0.0	34.1	0			
2880 min Winter	2.772	0.0	36.0	0			
4320 min Winter	2.011	0.0	38.6	0			
5760 min Winter	1.600	0.0	40.3	0			
7200 min Winter	1.339	0.0	41.5	0			
8640 min Winter	1.157	0.0	42.4	0			
10080 min Winter	1.023	0.0	43.1	0			
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Model Details

Storage is Online Cover Level (m) 61.525

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	16.0
Membrane Percolation (mm/hr)	1000	Length (m)	18.0
Max Percolation (l/s)	80.0	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	61.050	Membrane Depth (m)	300

Orifice Outflow Control

Diameter (m) 0.049 Discharge Coefficient 0.600 Invert Level (m) 60.985

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