

RGP Design Limited				Page 1																																																																																																																																																																																																																			
Metro House Northgate Chichester PO19 1BE		Progress Garage Yapton Lane Walberton BN18 0AS																																																																																																																																																																																																																					
Date 02/02/2018 File D1377 Porous Paving + 4...		Designed by SPB Checked by MJA																																																																																																																																																																																																																					
XP Solutions		Source Control 2016.1																																																																																																																																																																																																																					
Summary of Results for 100 year Return Period (+40%) Half Drain Time : 11 minutes. <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>49.774</td><td>1.624</td><td>16.5</td><td>13.9</td><td>O K</td></tr><tr><td>30 min Summer</td><td>49.801</td><td>1.651</td><td>16.5</td><td>17.9</td><td>O K</td></tr><tr><td>60 min Summer</td><td>49.808</td><td>1.658</td><td>16.5</td><td>19.0</td><td>O K</td></tr><tr><td>120 min Summer</td><td>49.786</td><td>1.636</td><td>16.5</td><td>15.7</td><td>O K</td></tr><tr><td>180 min Summer</td><td>49.762</td><td>1.612</td><td>16.5</td><td>12.1</td><td>O K</td></tr><tr><td>240 min Summer</td><td>49.748</td><td>1.598</td><td>16.0</td><td>10.0</td><td>O K</td></tr><tr><td>360 min Summer</td><td>49.738</td><td>1.588</td><td>12.7</td><td>8.4</td><td>O K</td></tr><tr><td>480 min Summer</td><td>49.731</td><td>1.581</td><td>10.5</td><td>7.4</td><td>O K</td></tr><tr><td>600 min Summer</td><td>49.727</td><td>1.577</td><td>9.1</td><td>6.8</td><td>O K</td></tr><tr><td>720 min Summer</td><td>49.724</td><td>1.574</td><td>8.1</td><td>6.3</td><td>O K</td></tr><tr><td>960 min Summer</td><td>49.719</td><td>1.569</td><td>6.5</td><td>5.6</td><td>O K</td></tr><tr><td>1440 min Summer</td><td>49.714</td><td>1.564</td><td>4.9</td><td>4.8</td><td>O K</td></tr><tr><td>2160 min Summer</td><td>49.710</td><td>1.560</td><td>3.6</td><td>4.2</td><td>O K</td></tr><tr><td>2880 min Summer</td><td>49.708</td><td>1.558</td><td>3.0</td><td>3.9</td><td>O K</td></tr><tr><td>4320 min Summer</td><td>49.705</td><td>1.555</td><td>2.2</td><td>3.5</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>49.704</td><td>1.554</td><td>1.7</td><td>3.3</td><td>O K</td></tr><tr><td>7200 min Summer</td><td>49.703</td><td>1.553</td><td>1.5</td><td>3.2</td><td>O K</td></tr><tr><td>8640 min 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min Summer</td><td>10.424</td><td>0.0</td><td>310</td></tr><tr><td>720 min Summer</td><td>9.080</td><td>0.0</td><td>370</td></tr><tr><td>960 min Summer</td><td>7.296</td><td>0.0</td><td>492</td></tr><tr><td>1440 min Summer</td><td>5.348</td><td>0.0</td><td>726</td></tr><tr><td>2160 min Summer</td><td>3.912</td><td>0.0</td><td>1092</td></tr><tr><td>2880 min Summer</td><td>3.128</td><td>0.0</td><td>1440</td></tr><tr><td>4320 min Summer</td><td>2.279</td><td>0.0</td><td>2156</td></tr><tr><td>5760 min Summer</td><td>1.818</td><td>0.0</td><td>2928</td></tr><tr><td>7200 min Summer</td><td>1.528</td><td>0.0</td><td>3560</td></tr><tr><td>8640 min Summer</td><td>1.326</td><td>0.0</td><td>4400</td></tr><tr><td>10080 min Summer</td><td>1.176</td><td>0.0</td><td>5024</td></tr><tr><td>15 min Winter</td><td>125.049</td><td>0.0</td><td>17</td></tr></tbody></table>						Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	15 min Summer	49.774	1.624	16.5	13.9	O K	30 min Summer	49.801	1.651	16.5	17.9	O K	60 min Summer	49.808	1.658	16.5	19.0	O K	120 min Summer	49.786	1.636	16.5	15.7	O K	180 min Summer	49.762	1.612	16.5	12.1	O K	240 min Summer	49.748	1.598	16.0	10.0	O K	360 min Summer	49.738	1.588	12.7	8.4	O K	480 min Summer	49.731	1.581	10.5	7.4	O K	600 min Summer	49.727	1.577	9.1	6.8	O K	720 min Summer	49.724	1.574	8.1	6.3	O K	960 min Summer	49.719	1.569	6.5	5.6	O K	1440 min Summer	49.714	1.564	4.9	4.8	O K	2160 min Summer	49.710	1.560	3.6	4.2	O K	2880 min Summer	49.708	1.558	3.0	3.9	O K	4320 min Summer	49.705	1.555	2.2	3.5	O K	5760 min Summer	49.704	1.554	1.7	3.3	O K	7200 min Summer	49.703	1.553	1.5	3.2	O K	8640 min Summer	49.702	1.552	1.2	3.1	O K	10080 min Summer	49.702	1.552	1.2	3.1	O K	15 min Winter	49.790	1.640	16.5	16.2	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	15 min Summer	125.049	0.0	17	30 min Summer	84.845	0.0	26	60 min Summer	54.957	0.0	42	120 min Summer	34.325	0.0	74	180 min Summer	25.640	0.0	102	240 min 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RGP Design Limited			Page 2		
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XP Solutions		Source Control 2016.1			
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	49.818	1.668	16.5	20.4	O K
60 min Winter	49.816	1.666	16.5	20.2	O K
120 min Winter	49.774	1.624	16.5	13.9	O K
180 min Winter	49.748	1.598	15.8	9.9	O K
240 min Winter	49.739	1.589	13.1	8.6	O K
360 min Winter	49.729	1.579	9.9	7.1	O K
480 min Winter	49.724	1.574	8.1	6.3	O K
600 min Winter	49.720	1.570	6.8	5.7	O K
720 min Winter	49.717	1.567	6.0	5.3	O K
960 min Winter	49.714	1.564	4.9	4.8	O K
1440 min Winter	49.710	1.560	3.6	4.2	O K
2160 min Winter	49.707	1.557	2.6	3.7	O K
2880 min Winter	49.705	1.555	2.2	3.5	O K
4320 min Winter	49.703	1.553	1.5	3.2	O K
5760 min Winter	49.702	1.552	1.2	3.1	O K
7200 min Winter	49.702	1.552	1.0	3.0	O K
8640 min Winter	49.701	1.551	0.9	2.9	O K
10080 min Winter	49.701	1.551	0.9	2.9	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	84.845	0.0	27		
60 min Winter	54.957	0.0	44		
120 min Winter	34.325	0.0	76		
180 min Winter	25.640	0.0	100		
240 min Winter	20.674	0.0	130		
360 min Winter	15.300	0.0	190		
480 min Winter	12.333	0.0	254		
600 min Winter	10.424	0.0	312		
720 min Winter	9.080	0.0	366		
960 min Winter	7.296	0.0	492		
1440 min Winter	5.348	0.0	744		
2160 min Winter	3.912	0.0	1100		
2880 min Winter	3.128	0.0	1436		
4320 min Winter	2.279	0.0	2188		
5760 min Winter	1.818	0.0	2840		
7200 min Winter	1.528	0.0	3568		
8640 min Winter	1.326	0.0	4256		
10080 min Winter	1.176	0.0	5192		
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RGP Design Limited		Page 3
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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)	19.400	Shortest Storm (mins)	15
Ratio R	0.331	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.112

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From: To:	(ha)	From: To:	(ha)	From: To:	(ha)
0 4	0.067	4 8	0.033	8 12	0.012

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RGP Design Limited		Page 4																																												
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<u>Model Details</u> Storage is Online Cover Level (m) 50.150 <u>Complex Structure</u> <u>Lined Soakaway</u> <table> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.23331</td> <td>Ring Diameter (m)</td> <td>1.20</td> </tr> <tr> <td>Infiltration Coefficient Side (m/hr)</td> <td>0.23331</td> <td>Pit Multiplier</td> <td>1.5</td> </tr> <tr> <td>Safety Factor</td> <td>2.0</td> <td>Number Required</td> <td>1</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Cap Volume Depth (m)</td> <td>0.000</td> </tr> <tr> <td>Invert Level (m)</td> <td>48.150</td> <td>Cap Infiltration Depth (m)</td> <td>0.000</td> </tr> </table> <u>Porous Car Park</u> <table> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.23331</td> <td>Width (m)</td> <td>10.0</td> </tr> <tr> <td>Membrane Percolation (mm/hr)</td> <td>1000</td> <td>Length (m)</td> <td>49.5</td> </tr> <tr> <td>Max Percolation (l/s)</td> <td>137.5</td> <td>Slope (1:X)</td> <td>0.0</td> </tr> <tr> <td>Safety Factor</td> <td>2.0</td> <td>Depression Storage (mm)</td> <td>5</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Evaporation (mm/day)</td> <td>3</td> </tr> <tr> <td>Invert Level (m)</td> <td>49.700</td> <td>Membrane Depth (m)</td> <td>0</td> </tr> </table>			Infiltration Coefficient Base (m/hr)	0.23331	Ring Diameter (m)	1.20	Infiltration Coefficient Side (m/hr)	0.23331	Pit Multiplier	1.5	Safety Factor	2.0	Number Required	1	Porosity	0.30	Cap Volume Depth (m)	0.000	Invert Level (m)	48.150	Cap Infiltration Depth (m)	0.000	Infiltration Coefficient Base (m/hr)	0.23331	Width (m)	10.0	Membrane Percolation (mm/hr)	1000	Length (m)	49.5	Max Percolation (l/s)	137.5	Slope (1:X)	0.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	49.700	Membrane Depth (m)	0
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