



Quotation for the supply of Rainwater Harvesting Equipment

Client:

**Mr Tim Skinner
Old Vicarage Construction Ltd**

Site Reference:

Soakaway Report for Wren House - SG4 7JA

Prepared by:

**Ian Woodcock
ianw@rainwaterharvesting.co.uk
01733 405104 / 07736 45 46 45**

Our reference : IMW114271

Date of proposal : 04/09/2024



Your Proposal

Thank you for your enquiry and as requested please find the following information regarding our proposed attenuation system.

Drainage anti-flooding blocks (Graf Bloc) with 300-litre capacity for rapid drainage of land. Surface water is diverted or soaks down into weight resistant crates and from there dissipate into the lower ground clearing water quickly from the surface.

The rigid crates are made in black polypropylene (PP) and measure 1200mm (l) x 600mm (w) x 420mm(h) and will hold a maximum capacity of 300 litres gross or a working volume of 285 litres.

The size of soakaway required is

$$4.8 \times 4.2 \times 0.84 \text{ m} = 16.93 \text{ m}^3$$

Please see calculations on page 4

The crates can be connected together into larger grids or blocks and wrapped in a geo-textile to slow the drainage of the water forming the equivalent of an underground pond. Easy to install The Graf Rain Bloc can be installed in rows or block form, with 1 to a maximum of 10 layers, depending on the local conditions and the desired storage capacity. installing the module is easy, fast and variable. it can be installed without heavy equipment - a Rain Bloc weighs just 15 kg. The individual modules are connected using practical fast connectors

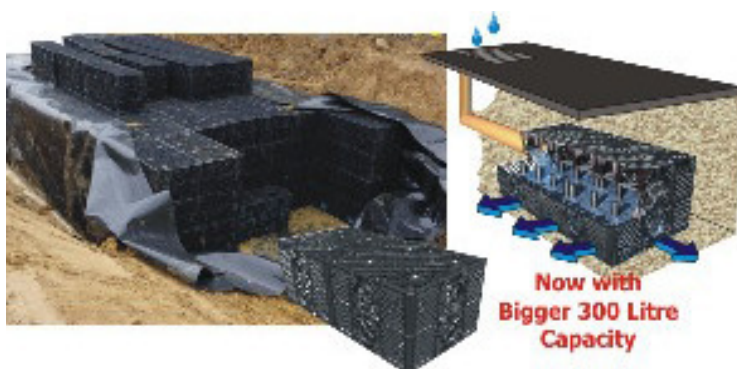
We would welcome the opportunity of supplying your soakaway system and I can easily be contacted either by phone or email as shown on the previous page



Components and Prices – Supply Only

Option 1

Product Code: **Graf Rain Bloc & Geotextile Wrap**



Components

Product Code	Description	Qty
360014	GRAF RAIN BLOC 300	56
318500	NW8 NON WOVEN GEOTEXTILE	68





Wren House, Little Wymondley. SG4 7JA

TEST PIT 1					
Length	Width	Height			
1	1	1.2	Volume=		0.6
			Surface Area=		3.4
Time/mins					
139			Infiltration rate=		0.0347155
248					
305					
Longest Time/hours	5.08333333				

TEST PIT 2					
Length	Width	Height			
1	1	1.2	Volume=		0.6
			Surface Area=		3.4
Time/mins					
156			Infiltration rate=		0.0351769
217					
301					
Longest Time/hours	5.01666667				

SITE INFILTRATION RATE 0.0347155

Rainwater Harvesting Ltd					Page 1																																																																																																																																																																																																																			
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Summary of Results for 100 year Return Period (+40%) Half Drain Time : 873 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>0.336</td><td>0.336</td><td>0.1</td><td>6.4</td><td>O K</td></tr><tr><td>30 min Summer</td><td>0.436</td><td>0.436</td><td>0.1</td><td>8.3</td><td>O K</td></tr><tr><td>60 min Summer</td><td>0.534</td><td>0.534</td><td>0.1</td><td>10.2</td><td>O K</td></tr><tr><td>120 min Summer</td><td>0.623</td><td>0.623</td><td>0.2</td><td>11.9</td><td>O K</td></tr><tr><td>180 min Summer</td><td>0.666</td><td>0.666</td><td>0.2</td><td>12.7</td><td>O K</td></tr><tr><td>240 min Summer</td><td>0.690</td><td>0.690</td><td>0.2</td><td>13.2</td><td>O K</td></tr><tr><td>360 min Summer</td><td>0.711</td><td>0.711</td><td>0.2</td><td>13.6</td><td>O K</td></tr><tr><td>480 min Summer</td><td>0.716</td><td>0.716</td><td>0.2</td><td>13.7</td><td>O K</td></tr><tr><td>600 min Summer</td><td>0.712</td><td>0.712</td><td>0.2</td><td>13.6</td><td>O K</td></tr><tr><td>720 min Summer</td><td>0.703</td><td>0.703</td><td>0.2</td><td>13.4</td><td>O K</td></tr><tr><td>960 min Summer</td><td>0.686</td><td>0.686</td><td>0.2</td><td>13.1</td><td>O K</td></tr><tr><td>1440 min Summer</td><td>0.650</td><td>0.650</td><td>0.2</td><td>12.4</td><td>O K</td></tr><tr><td>2160 min Summer</td><td>0.599</td><td>0.599</td><td>0.1</td><td>11.4</td><td>O K</td></tr><tr><td>2880 min Summer</td><td>0.552</td><td>0.552</td><td>0.1</td><td>10.5</td><td>O K</td></tr><tr><td>4320 min Summer</td><td>0.469</td><td>0.469</td><td>0.1</td><td>9.0</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>0.398</td><td>0.398</td><td>0.1</td><td>7.6</td><td>O K</td></tr><tr><td>7200 min Summer</td><td>0.335</td><td>0.335</td><td>0.1</td><td>6.4</td><td>O K</td></tr><tr><td>8640 min Summer</td><td>0.282</td><td>0.282</td><td>0.1</td><td>5.4</td><td>O K</td></tr><tr><td>10080 min Summer</td><td>0.235</td><td>0.235</td><td>0.1</td><td>4.5</td><td>O K</td></tr><tr><td>15 min Winter</td><td>0.377</td><td>0.377</td><td>0.1</td><td>7.2</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>139.942</td><td>0.0</td><td>26</td></tr><tr><td>30 min Summer</td><td>91.303</td><td>0.0</td><td>41</td></tr><tr><td>60 min Summer</td><td>56.713</td><td>0.0</td><td>70</td></tr><tr><td>120 min Summer</td><td>34.038</td><td>0.0</td><td>128</td></tr><tr><td>180 min Summer</td><td>24.922</td><td>0.0</td><td>188</td></tr><tr><td>240 min Summer</td><td>19.863</td><td>0.0</td><td>246</td></tr><tr><td>360 min Summer</td><td>14.376</td><td>0.0</td><td>364</td></tr><tr><td>480 min Summer</td><td>11.430</td><td>0.0</td><td>482</td></tr><tr><td>600 min 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Rainwater Harvesting Ltd				Page 2	
Unit A Harrier Park Orton Southgate Peterborough PE2 6YQ					
Date 03/09/2024 13:00 File IMW SG4 7JA Wren House ...		Designed by RainWater Harves... Checked by			
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	0.490	0.490	0.1	9.3	O K
60 min Winter	0.600	0.600	0.1	11.5	O K
120 min Winter	0.703	0.703	0.2	13.4	O K
180 min Winter	0.754	0.754	0.2	14.4	O K
240 min Winter	0.782	0.782	0.2	14.9	O K
360 min Winter	0.810	0.810	0.2	15.5	O K
480 min Winter	0.821	0.821	0.2	15.7	O K
600 min Winter	0.821	0.821	0.2	15.7	O K
720 min Winter	0.815	0.815	0.2	15.6	O K
960 min Winter	0.793	0.793	0.2	15.1	O K
1440 min Winter	0.749	0.749	0.2	14.3	O K
2160 min Winter	0.680	0.680	0.2	13.0	O K
2880 min Winter	0.612	0.612	0.1	11.7	O K
4320 min Winter	0.492	0.492	0.1	9.4	O K
5760 min Winter	0.390	0.390	0.1	7.5	O K
7200 min Winter	0.304	0.304	0.1	5.8	O K
8640 min Winter	0.231	0.231	0.1	4.4	O K
10080 min Winter	0.170	0.170	0.1	3.3	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	91.303	0.0	40		
60 min Winter	56.713	0.0	70		
120 min Winter	34.038	0.0	126		
180 min Winter	24.922	0.0	184		
240 min Winter	19.863	0.0	242		
360 min Winter	14.376	0.0	356		
480 min Winter	11.430	0.0	470		
600 min Winter	9.562	0.0	582		
720 min Winter	8.260	0.0	688		
960 min Winter	6.553	0.0	880		
1440 min Winter	4.721	0.0	1100		
2160 min Winter	3.397	0.0	1560		
2880 min Winter	2.686	0.0	2000		
4320 min Winter	1.927	0.0	2856		
5760 min Winter	1.522	0.0	3688		
7200 min Winter	1.266	0.0	4464		
8640 min Winter	1.089	0.0	5192		
10080 min Winter	0.959	0.0	5856		
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Unit A Harrier Park Orton Southgate Peterborough PE2 6YQ		
Date 03/09/2024 13:00	Designed by RainWater Harves...	
File IMW SG4 7JA Wren House ...	Checked by	
XP Solutions		Source Control 2016.1

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)	20.000	Shortest Storm (mins)	15
Ratio R	0.415	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.025

Time (mins) Area			Time (mins) Area			Time (mins) Area		
From:	To:	(ha)	From:	To:	(ha)	From:	To:	(ha)
0	4	0.008	4	8	0.008	8	12	0.008

Rainwater Harvesting Ltd		Page 4																		
Unit A Harrier Park Orton Southgate Peterborough PE2 6YQ																				
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XP Solutions	Source Control 2016.1																			
Model Details Storage is Online Cover Level (m) 1.200 Cellular Storage Structure Invert Level (m) 0.000 Safety Factor 2.0 Infiltration Coefficient Base (m/hr) 0.03472 Porosity 0.95 Infiltration Coefficient Side (m/hr) 0.03472 <table><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>20.1</td><td>20.1</td><td>0.841</td><td>0.0</td><td>35.2</td></tr><tr><td>0.840</td><td>20.1</td><td>35.2</td><td></td><td></td><td></td></tr></tbody></table>			Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	0.000	20.1	20.1	0.841	0.0	35.2	0.840	20.1	35.2			
Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)															
0.000	20.1	20.1	0.841	0.0	35.2															
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Event: 600 min Winter

