

"the Crickets", Hoe Lane, Flansham, Bognor Regis PO22 8NT Planning Reference Y/42/20/PL

The Design Parameters for the Proposed Geocellular Structure Soakaway Installation S/A #1 located in the rear garden are as follows :-

The Soil Infiltration Rate for the Sides is 1.170E-5 metres / second.

The Soil Infiltration Rate for the Base is 1.170E-5 metres / second.

The Installation consists of a GeoCellular Structure of 7.80 metres Long by 4.80 metres Wide and 0.347 metres in Depth.

With a Cover Depth of 0.35 metres.

Percentage Void Space of 95%.

Impermeable Area specified as 171 square metres.

Using a Safety Factor of 3.0

The Design adopts a Factored Soil Infiltration Rate for the Sides of 3.900E-6 metres / second.

And a Factored Soil Infiltration Rate for the Base of 3.900E-6 metres / second.

Both the Side Areas and the Base Area are Included in the Calculations.

The Rainfall Ratio for the Location is $r=0.36$

Rainfall Base Rate M5-60min the 5 Year Return Period Rainfall of 60 minutes Duration is 19.0mm.

Lowest Incoming Pipe Invert Height is 247mm above the Installation Base.

All Levels are referenced to 'Above Ordinance Datum' (AOD)

The Highest Recorded Groundwater at the Location of the Proposed Soakaway is 2.761 metres at a depth of 0.706 metres Below Ground Level (BGL)

The Ground Level at the Location of the Proposed Soakaway is 3.467 metres.

The Soffit Level of the Proposed Soakaway is 3.117 metres.

The Invert Level of the Lowest Incoming Pipe on the Proposed Soakaway is 3.017 metres

The Base Level of the Proposed Soakaway is 2.770 metres

The Base of the Soakaway Structure is 0.009 metres above the Highest Recorded Groundwater at the location of the Soakaway. This meets Building Regulations.

The Design Summary for the Proposed Geocellular Structure Soakaway Installation S/A#1 is as follows :-

For a 10 Year Return Storm Includes a 40% Increase for Climate Change.

The Design requires storage of 6.02 cubic metres out of 8.79 cubic metres available.

Therefore Storage is Passed with a Critical Storm occurring at 4 hours.

And the Half Drain Time is OK within the Allowable 24 hours Period at 5.42 hours.

For a 100 Year Return Storm Includes a 40% Increase for Climate Change.

The Design requires storage of 11.44 cubic metres out of 12.34 cubic metres available.

Therefore Storage is Passed with a Critical Storm occurring at 6 hours.

And the Half Drain Time is OK within the Allowable 24 hours Period at 9.82 hours.

10 Year Return Storm Includes a 40% Increase for Climate Change.

Storm Duration	Factor Z1-5	M5 Return Rainfall	Factor Z2-10	M10 Return Rainfall	Inflow Cu Metres	Outflow Cu Metres	Internal Water Level	Required Storage	Soakaway Status
5 minutes	0.360	6.80	1.190	11.40	1.949	0.047	53	1.901	-OK-
10 minutes	0.510	9.70	1.220	16.60	2.830	0.095	77	2.735	-OK-
15 minutes	0.620	11.80	1.220	20.10	3.441	0.142	93	3.298	-OK-
30 minutes	0.790	15.00	1.240	26.10	4.456	0.285	117	4.171	-OK-
1 hour	1.000	19.00	1.250	33.20	5.686	0.569	144	5.116	-OK-
2 hours	1.216	23.10	1.240	40.10	6.859	1.139	161	5.720	-OK-
3 hours	1.364	25.90	1.240	45.00	7.693	1.708	168	5.985	-OK-
4 hours	1.495	28.40	1.220	48.50	8.296	2.277	169	6.019	-OK-
5 hours	1.593	30.30	1.220	51.70	8.840	2.847	169	5.993	-OK-
6 hours	1.670	31.70	1.220	54.20	9.267	3.416	165	5.851	-OK-
7 hours	1.745	33.20	1.203	55.80	9.549	3.985	156	5.563	-OK-
8 hours	1.805	34.30	1.203	57.80	9.877	4.555	150	5.322	-OK-
9 hours	1.863	35.40	1.203	59.60	10.194	5.124	143	5.070	-OK-
10 hours	1.915	36.40	1.203	61.30	10.479	5.694	135	4.785	-OK-
11 hours	1.960	37.20	1.203	62.70	10.725	6.263	125	4.462	-OK-
12 hours	2.005	38.10	1.190	63.50	10.853	6.832	113	4.020	-OK-
14 hours	2.085	39.60	1.190	66.00	11.286	7.971	93	3.315	-OK-
16 hours	2.155	40.90	1.190	68.20	11.665	9.110	72	2.555	-OK-
18 hours	2.225	42.30	1.190	70.40	12.044	10.248	50	1.795	-OK-
20 hours	2.295	43.60	1.180	72.00	12.318	11.387	26	0.931	-OK-
22 hours	2.360	44.80	1.180	74.10	12.667	12.526	4	0.141	-OK-
24 hours	2.430	46.20	1.180	76.30	13.043	13.664	empty	none	-OK-

Effective Volume of the Geocellular Structure Soakaway Installation for an M10 Return Period is 8.79 cubic metres.

Maximum Available (Effective) Outflow Surface Area at M10 Return is 40.55 square metres referenced to the Invert of the lowest incoming pipe.

Maximum Allowable Pre-Flood Water Level for 10 Year Return (Lowest Pipe Invert Level for Building Control) is 247mm.

For a 10 Year Return Period the Critical Storm occurs at 4 hours.

With a Maximum Internal Structure Critical Water Level of 169mm.

Requiring a Maximum (Critical) Storage Capacity of 6.02 cubic metres.

The Outflow Surface Area for the Critical Storm Duration for the M10 Return is 39.57 square metres referenced to the Critical Water Level.

Half Drain Time for a 10 Year Return Critical Storm is 5.42 hours.

100 Year Return Storm Includes a 40% Increase for Climate Change.

Storm Duration	Factor Z1-5	M5 Return Rainfall	Factor Z2-100	M100 Return Rainfall	Inflow Cu Metres	Outflow Cu Metres	Internal Water Level	Required Storage	Soakaway Status
5 minutes	0.360	6.80	1.790	17.10	2.931	0.049	81	2.882	-OK-
10 minutes	0.510	9.70	1.910	25.90	4.431	0.098	122	4.333	-OK-
15 minutes	0.620	11.80	1.910	31.50	5.386	0.147	147	5.240	-OK-
30 minutes	0.790	15.00	1.990	41.80	7.151	0.294	193	6.857	-OK-
1 hour	1.000	19.00	2.030	54.00	9.234	0.587	243	8.647	-OK-
2 hours	1.216	23.10	2.010	65.00	11.118	1.174	280	9.943	-OK-
3 hours	1.364	25.90	2.010	72.90	12.471	1.761	301	10.709	-OK-
4 hours	1.495	28.40	1.970	78.30	13.396	2.348	311	11.048	-OK-
5 hours	1.593	30.30	1.970	83.50	14.274	2.935	319	11.339	-OK-
6 hours	1.670	31.70	1.970	87.50	14.964	3.522	322	11.442	-OK-
7 hours	1.745	33.20	1.930	89.60	15.319	4.109	315	11.210	-OK-
8 hours	1.805	34.30	1.930	92.70	15.846	4.696	313	11.149	-OK-
9 hours	1.863	35.40	1.930	95.60	16.355	5.283	311	11.072	-OK-
10 hours	1.915	36.40	1.930	98.30	16.811	5.870	308	10.941	-OK-
11 hours	1.960	37.20	1.930	100.60	17.206	6.457	302	10.749	-OK-
12 hours	2.005	38.10	1.890	100.80	17.237	7.045	287	10.192	-OK-
14 hours	2.085	39.60	1.890	104.80	17.924	8.219	273	9.706	-OK-
16 hours	2.155	40.90	1.890	108.30	18.526	9.393	257	9.134	-OK-
18 hours	2.225	42.30	1.890	111.90	19.128	10.567	241	8.561	-OK-
20 hours	2.295	43.60	1.855	113.20	19.364	11.741	214	7.624	-OK-
22 hours	2.360	44.80	1.855	116.40	19.913	12.915	197	6.998	-OK-
24 hours	2.430	46.20	1.855	119.90	20.503	14.089	180	6.414	-OK-

Effective Volume of the Geocellular Structure Soakaway Installation for an M100 Return Period is 12.34 cubic metres.

Maximum Available (Effective) Outflow Surface Area at M100 Return is 41.81 square metres referenced to the top of the GeoCell Installation.

Maximum Allowable Pre-Flood Water Level for 100 Year Return (Soakaway Height) is 347mm.

For a 100 Year Return Period the Critical Storm occurs at 6 hours.

With a Maximum Internal Structure Critical Water Level of 322mm.

Requiring a Maximum (Critical) Storage Capacity of 11.44 cubic metres.

The Outflow Surface Area for the Critical Storm Duration for the M100 Return is 41.49 square metres referenced to the Critical Water Level.

Half Drain Time for a 100 Year Return Critical Storm is 9.82 hours.

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