

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

The Design Parameters for the Proposed Permeable Paving Structure (as flat) located as the new Garage Access Driveway are as follows :-

The Soil Infiltration Rate for the Sides is 0.00 metres / second.

The Soil Infiltration Rate for the Base is 3.979E-6 metres / second.

The Linear Permeable Pavement Installation is typically 12.10 metres Long by 6.12 metres average Width and 0.36 metres in Depth.

With a Cover Depth of 0.15 metres.

Percentage Void Space of 30%.

Impermeable Area specified as 74 square metres.

Using a Safety Factor of 2.0

The Side Areas are NOT Included in the Calculations with only a Factored Soil Infiltration Rate for the Base of 1.990E-6 metres / second.

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.

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

The Highest Recorded Groundwater at the Location of the Proposed Structure is 2.277 metres at a depth of 1.100 metres Below Ground Level (BGL)

The Highest Ground Level at the Location of the Proposed Structure is 3.377 metres at the Garage Entrance and joins the Existing Drive at 2.667 metres.

The Soffit Level of the Proposed Soakaway is 3.227 metres.

The Base Level of the Proposed Soakaway is 2.867 metres

The Base of the Soakaway Structure is 0.590 metres above the Highest Recorded Groundwater at the location of the Soakaway. This meets Building Regulations.

The Design Summary for the Proposed Permeable Paving Structure is as follows :-

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

The Design requires storage of 1.93 cubic metres out of 5.77 cubic metres available.

Therefore Storage is Passed with a Critical Storm occurring at 1 hour.

And the Half Drain Time is OK within the Allowable 24 hours Period at 1.82 hours.

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

The Design requires storage of 3.81 cubic metres out of 7.99 cubic metres available.

Therefore Storage is Passed with a Critical Storm occurring at 3 hours.

And the Half Drain Time is OK within the Allowable 24 hours Period at 3.59 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	0.843	0.044	36	0.799	-OK-
10 minutes	0.510	9.70	1.220	16.60	1.225	0.088	51	1.136	-OK-
15 minutes	0.620	11.80	1.220	20.10	1.489	0.133	61	1.356	-OK-
30 minutes	0.790	15.00	1.240	26.10	1.928	0.265	75	1.663	-OK-
1 hour	1.000	19.00	1.250	33.20	2.460	0.530	87	1.930	-OK-
2 hours	1.216	23.10	1.240	40.10	2.968	1.060	86	1.908	-OK-
3 hours	1.364	25.90	1.240	45.00	3.329	1.590	78	1.739	-OK-
4 hours	1.495	28.40	1.220	48.50	3.590	2.120	66	1.470	-OK-
5 hours	1.593	30.30	1.220	51.70	3.826	2.650	53	1.175	-OK-
6 hours	1.670	31.70	1.220	54.20	4.010	3.180	37	0.830	-OK-
7 hours	1.745	33.20	1.203	55.80	4.132	3.710	19	0.422	-OK-
8 hours	1.805	34.30	1.203	57.80	4.274	4.240	2	0.034	-OK-
9 hours	1.863	35.40	1.203	59.60	4.412	4.770	empty	none	-OK-
10 hours	1.915	36.40	1.203	61.30	4.535	5.300	empty	none	-OK-
11 hours	1.960	37.20	1.203	62.70	4.641	5.830	empty	none	-OK-
12 hours	2.005	38.10	1.190	63.50	4.697	6.360	empty	none	-OK-
14 hours	2.085	39.60	1.190	66.00	4.884	7.420	empty	none	-OK-
16 hours	2.155	40.90	1.190	68.20	5.048	8.480	empty	none	-OK-
18 hours	2.225	42.30	1.190	70.40	5.212	9.540	empty	none	-OK-
20 hours	2.295	43.60	1.180	72.00	5.331	10.600	empty	none	-OK-
22 hours	2.360	44.80	1.180	74.10	5.482	11.660	empty	none	-OK-
24 hours	2.430	46.20	1.180	76.30	5.644	12.720	empty	none	-OK-

Effective Volume of the Permeable Paving Structure Soakaway Installation for an M10 Return Period is 7.99 cubic metres.

Maximum Available (Effective) Outflow Surface Area at M10 Return is 74.00 square metres.

Maximum Allowable Pre-Flood Water Level for 10 Year Return (Soakaway Height) is 360mm.

For a 10 Year Return Period the Critical Storm occurs at 1 hour.

With a Maximum Internal Structure Critical Water Level of 87mm.

Requiring a Maximum (Critical) Storage Capacity of 1.93 cubic metres.

The Outflow Surface Area for the Critical Storm Duration for the M10 Return is 74.00 square metres referenced to the Critical Water Level.

Half Drain Time for a 10 Year Return Critical Storm is 1.82 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	1.268	0.044	55	1.224	-OK-
10 minutes	0.510	9.70	1.910	25.90	1.917	0.088	82	1.829	-OK-
15 minutes	0.620	11.80	1.910	31.50	2.331	0.133	99	2.198	-OK-
30 minutes	0.790	15.00	1.990	41.80	3.095	0.265	127	2.830	-OK-
1 hour	1.000	19.00	2.030	54.00	3.996	0.530	156	3.466	-OK-
2 hours	1.216	23.10	2.010	65.00	4.811	1.060	169	3.751	-OK-
3 hours	1.364	25.90	2.010	72.90	5.397	1.590	171	3.807	-OK-
4 hours	1.495	28.40	1.970	78.30	5.797	2.120	166	3.677	-OK-
5 hours	1.593	30.30	1.970	83.50	6.177	2.650	159	3.527	-OK-
6 hours	1.670	31.70	1.970	87.50	6.476	3.180	148	3.296	-OK-
7 hours	1.745	33.20	1.930	89.60	6.629	3.710	131	2.919	-OK-
8 hours	1.805	34.30	1.930	92.70	6.857	4.240	118	2.617	-OK-
9 hours	1.863	35.40	1.930	95.60	7.078	4.770	104	2.308	-OK-
10 hours	1.915	36.40	1.930	98.30	7.275	5.300	89	1.975	-OK-
11 hours	1.960	37.20	1.930	100.60	7.446	5.830	73	1.616	-OK-
12 hours	2.005	38.10	1.890	100.80	7.459	6.360	50	1.099	-OK-
14 hours	2.085	39.60	1.890	104.80	7.757	7.420	15	0.337	-OK-
16 hours	2.155	40.90	1.890	108.30	8.017	8.480	empty	none	-OK-
18 hours	2.225	42.30	1.890	111.90	8.278	9.540	empty	none	-OK-
20 hours	2.295	43.60	1.855	113.20	8.380	10.600	empty	none	-OK-
22 hours	2.360	44.80	1.855	116.40	8.617	11.660	empty	none	-OK-
24 hours	2.430	46.20	1.855	119.90	8.873	12.720	empty	none	-OK-

Effective Volume of the Permeable Paving Structure Soakaway Installation for an M100 Return Period is 7.99 cubic metres.

Maximum Available (Effective) Outflow Surface Area at M100 Return is 74.00 square metres.

Maximum Allowable Pre-Flood Water Level for 100 Year Return (Soakaway Height) is 360mm.

For a 100 Year Return Period the Critical Storm occurs at 3 hours.

With a Maximum Internal Structure Critical Water Level of 171mm.

Requiring a Maximum (Critical) Storage Capacity of 3.81 cubic metres.

The Outflow Surface Area for the Critical Storm Duration for the M100 Return is 74.00 square metres referenced to the Critical Water Level.

Half Drain Time for a 100 Year Return Critical Storm is 3.59 hours.

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