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One Little London Chichester Sussex PO19 1PP	ELM GROVE HAYLING ISLAND M1 PUMPED OUTFALL	
Date JUNE 2020 File ELM GROVE ATTENUATION WIT...	Designed By PF Checked By	
Micro Drainage	Source Control W.11.2	

Summary of Results for 1 year Return Period

Half Drain Time : 68 minutes

Storm Duration (mins)	Maximum Control (l/s)	Maximum Filtration (l/s)	Maximum Overflow (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Overflow Volume (m³)	Maximum Volume (m³)	Status
15 Summer	2.0	0.0	0.0	2.0	4.9493	0.0192	0.0	9.3	0 K
30 Summer	2.2	0.0	0.0	2.2	4.9553	0.0252	0.0	12.4	0 K
60 Summer	2.4	0.0	0.0	2.4	4.9608	0.0307	0.0	15.0	0 K
120 Summer	2.5	0.0	0.0	2.5	4.9638	0.0337	0.0	16.5	0 K
180 Summer	2.6	0.0	0.0	2.6	4.9648	0.0347	0.0	16.9	0 K
240 Summer	2.6	0.0	0.0	2.6	4.9643	0.0342	0.0	16.7	0 K
360 Summer	2.5	0.0	0.0	2.5	4.9623	0.0322	0.0	15.8	0 K
480 Summer	2.4	0.0	0.0	2.4	4.9603	0.0302	0.0	14.8	0 K
600 Summer	2.3	0.0	0.0	2.3	4.9583	0.0282	0.0	13.8	0 K
720 Summer	2.2	0.0	0.0	2.2	4.9563	0.0262	0.0	12.8	0 K
960 Summer	2.1	0.0	0.0	2.1	4.9528	0.0227	0.0	11.1	0 K
1440 Summer	1.9	0.0	0.0	1.9	4.9473	0.0173	0.0	8.4	0 K
2160 Summer	1.6	0.0	0.0	1.6	4.9408	0.0108	0.0	5.3	0 K
2880 Summer	1.5	0.0	0.0	1.5	4.9368	0.0068	0.0	3.2	0 K
4320 Summer	1.2	0.0	0.0	1.2	4.9313	0.0013	0.0	0.7	0 K
5760 Summer	1.1	0.0	0.0	1.1	4.9300	0.0000	0.0	0.0	0 K
7200 Summer	0.9	0.0	0.0	0.9	4.9300	0.0000	0.0	0.0	0 K
8640 Summer	0.8	0.0	0.0	0.8	4.9300	0.0000	0.0	0.0	0 K
10080 Summer	0.7	0.0	0.0	0.7	4.9300	0.0000	0.0	0.0	0 K
15 Winter	2.1	0.0	0.0	2.1	4.9523	0.0222	0.0	10.8	0 K
30 Winter	2.4	0.0	0.0	2.4	4.9593	0.0292	0.0	14.4	0 K
60 Winter	2.6	0.0	0.0	2.6	4.9658	0.0357	0.0	17.4	0 K
120 Winter	2.7	0.0	0.0	2.7	4.9688	0.0387	0.0	18.9	0 K
180 Winter	2.8	0.0	0.0	2.8	4.9693	0.0392	0.0	19.1	0 K
240 Winter	2.7	0.0	0.0	2.7	4.9683	0.0382	0.0	18.7	0 K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
15 Summer	29.65	20
30 Summer	19.73	33
60 Summer	12.80	58
120 Summer	8.16	90
180 Summer	6.24	124
240 Summer	5.15	160
360 Summer	3.90	228
480 Summer	3.20	294
600 Summer	2.74	360
720 Summer	2.42	426
960 Summer	1.98	552
1440 Summer	1.50	798
2160 Summer	1.13	1168
2880 Summer	0.93	1528
4320 Summer	0.70	2212
5760 Summer	0.58	0
7200 Summer	0.50	0
8640 Summer	0.44	0
10080 Summer	0.39	0
15 Winter	29.65	21
30 Winter	19.73	34
60 Winter	12.80	60
120 Winter	8.16	96
180 Winter	6.24	134
240 Winter	5.15	172

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Summary of Results for 1 year Return Period

Storm Duration (mins)	Maximum Control (l/s)	Maximum Filtration (l/s)	Maximum Overflow (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Overflow Volume (m³)	Maximum Volume (m³)	Status
360 Winter	2.6	0.0	0.0	2.6	4.9648	0.0347	0.0	17.0	0 K
480 Winter	2.4	0.0	0.0	2.4	4.9613	0.0312	0.0	15.4	0 K
600 Winter	2.3	0.0	0.0	2.3	4.9583	0.0282	0.0	13.8	0 K
720 Winter	2.2	0.0	0.0	2.2	4.9553	0.0252	0.0	12.4	0 K
960 Winter	2.0	0.0	0.0	2.0	4.9503	0.0202	0.0	10.0	0 K
1440 Winter	1.7	0.0	0.0	1.7	4.9433	0.0133	0.0	6.4	0 K
2160 Winter	1.4	0.0	0.0	1.4	4.9358	0.0058	0.0	2.7	0 K
2880 Winter	1.2	0.0	0.0	1.2	4.9313	0.0013	0.0	0.5	0 K
4320 Winter	1.0	0.0	0.0	1.0	4.9300	0.0000	0.0	0.0	0 K
5760 Winter	0.8	0.0	0.0	0.8	4.9300	0.0000	0.0	0.0	0 K
7200 Winter	0.7	0.0	0.0	0.7	4.9300	0.0000	0.0	0.0	0 K
8640 Winter	0.6	0.0	0.0	0.6	4.9300	0.0000	0.0	0.0	0 K
10080 Winter	0.5	0.0	0.0	0.5	4.9300	0.0000	0.0	0.0	0 K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
360 Winter	3.90	244
480 Winter	3.20	314
600 Winter	2.74	382
720 Winter	2.42	448
960 Winter	1.98	580
1440 Winter	1.50	828
2160 Winter	1.13	1192
2880 Winter	0.93	1524
4320 Winter	0.70	0
5760 Winter	0.58	0
7200 Winter	0.50	0
8640 Winter	0.44	0
10080 Winter	0.39	0

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Rainfall Details

Region	ENG+WAL	Cv (Summer)	0.750	Summer Storms	Yes
Return Period (years)	1	Cv (Winter)	0.840	Winter Storms	Yes
M5-60 (mm)	20.000	Shortest Storm (mins)	15	Climate Change %	+0
Ratio-R	0.350	Longest Storm (mins)	10080		

Time / Area Diagram

Total Area (ha) = 0.239

Time from:	(mins) to:	Area (ha)	Time from:	(mins) to:	Area (ha)
0	4	0.102	4	8	0.137

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Porous Car Park Details

Infil Coef - Base (m/hr)	0.000000	Invert Level (m)	4.930
Membrane Percolation (mm/hr)	1000	Cover Level (m)	6.400
Safety Factor	1.5	Slope (1:x)	0.0
Porosity	0.95	Max Percolation (l/s)	143.1
Length (m)	22.7	Depression Storage (mm)	5
Width (m)	22.7	Evaporation (mm/day)	3

Pump Outflow Control

Invert Level of Control 4.900

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.10	4.0	0.60	4.0	1.60	4.0	2.60	4.0	5.00	4.0	7.50	4.0
0.20	4.0	0.80	4.0	1.80	4.0	3.00	4.0	5.50	4.0	8.00	4.0
0.30	4.0	1.00	4.0	2.00	4.0	3.50	4.0	6.00	4.0	8.50	4.0
0.40	4.0	1.20	4.0	2.20	4.0	4.00	4.0	6.50	4.0	9.00	4.0
0.50	4.0	1.40	4.0	2.40	4.0	4.50	4.0	7.00	4.0	9.50	4.0

Pipe Overflow Control

Pipe Diameter (m)	0.100	Roughness (mm)	0.600	Invert Level (m)	5.230
Slope (1:x)	50.0	Entry Loss Coef	0.500		
Length (m)	5.000	Coef of Contraction	0.600		