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One Little London Chichester Sussex PO19 1PP	ELM GROVE HAYLING ISLAND M30 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 30 year Return Period

Half Drain Time : 123 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	3.4	0.0	0.0	3.4	4.9863	0.0563	0.0	27.5	0 K
30 Summer	4.0	0.0	0.0	4.0	5.0033	0.0733	0.0	35.8	0 K
60 Summer	4.0	0.0	0.0	4.0	5.0178	0.0878	0.0	42.9	0 K
120 Summer	4.0	0.0	0.0	4.0	5.0258	0.0958	0.0	46.9	0 K
180 Summer	4.0	0.0	0.0	4.0	5.0273	0.0973	0.0	47.5	0 K
240 Summer	4.0	0.0	0.0	4.0	5.0263	0.0963	0.0	47.1	0 K
360 Summer	4.0	0.0	0.0	4.0	5.0223	0.0923	0.0	45.1	0 K
480 Summer	4.0	0.0	0.0	4.0	5.0168	0.0868	0.0	42.5	0 K
600 Summer	4.0	0.0	0.0	4.0	5.0113	0.0813	0.0	39.9	0 K
720 Summer	4.0	0.0	0.0	4.0	5.0063	0.0763	0.0	37.4	0 K
960 Summer	3.9	0.0	0.0	3.9	4.9983	0.0683	0.0	33.4	0 K
1440 Summer	3.4	0.0	0.0	3.4	4.9863	0.0562	0.0	27.5	0 K
2160 Summer	2.9	0.0	0.0	2.9	4.9733	0.0432	0.0	21.2	0 K
2880 Summer	2.6	0.0	0.0	2.6	4.9643	0.0342	0.0	16.7	0 K
4320 Summer	2.1	0.0	0.0	2.1	4.9518	0.0217	0.0	10.7	0 K
5760 Summer	1.7	0.0	0.0	1.7	4.9438	0.0138	0.0	6.8	0 K
7200 Summer	1.5	0.0	0.0	1.5	4.9383	0.0083	0.0	4.1	0 K
8640 Summer	1.4	0.0	0.0	1.4	4.9343	0.0043	0.0	2.2	0 K
10080 Summer	1.3	0.0	0.0	1.3	4.9318	0.0018	0.0	0.8	0 K
15 Winter	3.7	0.0	0.0	3.7	4.9938	0.0638	0.0	31.2	0 K
30 Winter	4.0	0.0	0.0	4.0	5.0138	0.0838	0.0	40.9	0 K
60 Winter	4.0	0.0	0.0	4.0	5.0308	0.1008	0.0	49.4	0 K
120 Winter	4.0	0.0	0.0	4.0	5.0413	0.1113	0.0	54.4	0 K
180 Winter	4.0	0.0	0.0	4.0	5.0418	0.1118	0.0	54.7	0 K
240 Winter	4.0	0.0	0.0	4.0	5.0403	0.1103	0.0	53.9	0 K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
15 Summer	72.68	21
30 Summer	48.36	35
60 Summer	30.81	62
120 Summer	19.04	104
180 Summer	14.19	136
240 Summer	11.47	170
360 Summer	8.49	238
480 Summer	6.85	306
600 Summer	5.80	372
720 Summer	5.06	438
960 Summer	4.07	562
1440 Summer	3.00	814
2160 Summer	2.20	1192
2880 Summer	1.77	1556
4320 Summer	1.30	2292
5760 Summer	1.04	3000
7200 Summer	0.88	3744
8640 Summer	0.76	4416
10080 Summer	0.68	5144
15 Winter	72.68	21
30 Winter	48.36	35
60 Winter	30.81	62
120 Winter	19.04	116
180 Winter	14.19	146
240 Winter	11.47	184

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Summary of Results for 30 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	4.0	0.0	0.0	4.0	5.0338	0.1038	0.0	50.8	0 K
480 Winter	4.0	0.0	0.0	4.0	5.0253	0.0953	0.0	46.7	0 K
600 Winter	4.0	0.0	0.0	4.0	5.0168	0.0868	0.0	42.6	0 K
720 Winter	4.0	0.0	0.0	4.0	5.0088	0.0788	0.0	38.7	0 K
960 Winter	3.9	0.0	0.0	3.9	4.9973	0.0673	0.0	32.8	0 K
1440 Winter	3.2	0.0	0.0	3.2	4.9813	0.0512	0.0	25.2	0 K
2160 Winter	2.6	0.0	0.0	2.6	4.9658	0.0357	0.0	17.5	0 K
2880 Winter	2.2	0.0	0.0	2.2	4.9553	0.0252	0.0	12.5	0 K
4320 Winter	1.7	0.0	0.0	1.7	4.9428	0.0128	0.0	6.2	0 K
5760 Winter	1.4	0.0	0.0	1.4	4.9348	0.0048	0.0	2.4	0 K
7200 Winter	1.2	0.0	0.0	1.2	4.9303	0.0003	0.0	0.1	0 K
8640 Winter	1.1	0.0	0.0	1.1	4.9300	0.0000	0.0	0.0	0 K
10080 Winter	0.9	0.0	0.0	0.9	4.9300	0.0000	0.0	0.0	0 K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
360 Winter	8.49	260
480 Winter	6.85	332
600 Winter	5.80	400
720 Winter	5.06	466
960 Winter	4.07	590
1440 Winter	3.00	852
2160 Winter	2.20	1228
2880 Winter	1.77	1592
4320 Winter	1.30	2300
5760 Winter	1.04	3056
7200 Winter	0.88	3672
8640 Winter	0.76	0
10080 Winter	0.68	0

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Rainfall Details

Region	ENG+WAL	Cv (Summer)	0.750	Summer Storms	Yes
Return Period (years)	30	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		