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York House, Edison Park Dorcan Way Swindon, SN3 3RB	Hayling Island Permeable Paving Area 6	
Date 13-08-14 File cascade PP6-basin3.casx	Designed By AD Checked By	
Elstree Computing Ltd	Source Control W.12.4	

Cascade Summary of Results for PP Area 6.srcx

Upstream **Outflow To** **Overflow To**
Structures

(None) 4059 Ph2-Basin 3.srcx (None)

Half Drain Time : 53 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	4.463	0.323	0.0	4.9	4.9	19.6	O K
30 min Summer	4.543	0.403	0.0	5.5	5.5	24.5	O K
60 min Summer	4.594	0.454	0.0	5.9	5.9	27.5	Flood Risk
120 min Summer	4.611	0.471	0.0	6.0	6.0	28.6	Flood Risk
180 min Summer	4.595	0.455	0.0	5.9	5.9	27.6	Flood Risk
240 min Summer	4.570	0.430	0.0	5.7	5.7	26.1	Flood Risk
360 min Summer	4.519	0.379	0.0	5.3	5.3	23.0	O K
480 min Summer	4.476	0.336	0.0	5.0	5.0	20.4	O K
600 min Summer	4.440	0.300	0.0	4.7	4.7	18.2	O K
720 min Summer	4.409	0.269	0.0	4.5	4.5	16.3	O K
960 min Summer	4.361	0.221	0.0	4.0	4.0	13.4	O K
1440 min Summer	4.298	0.158	0.0	3.4	3.4	9.5	O K
2160 min Summer	4.247	0.107	0.0	2.7	2.7	6.4	O K
2880 min Summer	4.220	0.080	0.0	2.3	2.3	4.8	O K
4320 min Summer	4.199	0.059	0.0	1.7	1.7	3.5	O K
5760 min Summer	4.188	0.048	0.0	1.4	1.4	2.8	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
15 min Summer	115.731	17
30 min Summer	77.804	30
60 min Summer	49.937	48
120 min Summer	30.956	82
180 min Summer	23.058	116
240 min Summer	18.577	150
360 min Summer	13.656	216
480 min Summer	10.974	280
600 min Summer	9.254	342
720 min Summer	8.046	404
960 min Summer	6.447	522
1440 min Summer	4.709	764
2160 min Summer	3.432	1124
2880 min Summer	2.739	1472
4320 min Summer	1.989	2204
5760 min Summer	1.583	2936

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Cascade Summary of Results for PP Area 6.srcx

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m ³)	Status
7200 min Summer	4.181	0.041	0.0	1.2	1.2	2.4	O K
8640 min Summer	4.176	0.036	0.0	1.0	1.0	2.1	O K
10080 min Summer	4.173	0.033	0.0	0.9	0.9	1.9	O K
15 min Winter	4.506	0.366	0.0	5.2	5.2	22.2	O K
30 min Winter	4.600	0.460	0.0	5.9	5.9	27.9	Flood Risk
60 min Winter	4.655	0.515	0.0	6.2	6.2	31.2	Flood Risk
120 min Winter	4.663	0.523	0.0	6.3	6.3	31.8	Flood Risk
180 min Winter	4.633	0.493	0.0	6.1	6.1	29.9	Flood Risk
240 min Winter	4.593	0.453	0.0	5.9	5.9	27.5	Flood Risk
360 min Winter	4.519	0.379	0.0	5.3	5.3	23.0	O K
480 min Winter	4.460	0.320	0.0	4.9	4.9	19.4	O K
600 min Winter	4.412	0.272	0.0	4.5	4.5	16.5	O K
720 min Winter	4.374	0.234	0.0	4.2	4.2	14.2	O K
960 min Winter	4.319	0.179	0.0	3.6	3.6	10.8	O K
1440 min Winter	4.255	0.115	0.0	2.8	2.8	6.9	O K
2160 min Winter	4.213	0.073	0.0	2.2	2.2	4.3	O K
2880 min Winter	4.199	0.059	0.0	1.7	1.7	3.5	O K
4320 min Winter	4.185	0.045	0.0	1.3	1.3	2.6	O K
5760 min Winter	4.176	0.036	0.0	1.0	1.0	2.1	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
7200 min Summer	1.325	3672
8640 min Summer	1.147	4352
10080 min Summer	1.015	5128
15 min Winter	115.731	17
30 min Winter	77.804	30
60 min Winter	49.937	50
120 min Winter	30.956	88
180 min Winter	23.058	124
240 min Winter	18.577	160
360 min Winter	13.656	228
480 min Winter	10.974	292
600 min Winter	9.254	356
720 min Winter	8.046	418
960 min Winter	6.447	538
1440 min Winter	4.709	778
2160 min Winter	3.432	1104
2880 min Winter	2.739	1468
4320 min Winter	1.989	2200
5760 min Winter	1.583	2928

York House, Edison Park
Dorcan Way
Swindon, SN3 3RB

Hayling Island
Permeable Paving
Area 6



Date 13-08-14

Designed By AD

File cascade PP6-basin3.casx

Checked By

Elstree Computing Ltd

Source Control W.12.4

Cascade Summary of Results for PP Area 6.srcx

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Outflow (l/s)	Max Volume (m³)	Status
7200 min Winter	4.170	0.030	0.0	0.8	0.8	1.7	O K
8640 min Winter	4.165	0.025	0.0	0.7	0.7	1.4	O K
10080 min Winter	4.162	0.022	0.0	0.6	0.6	1.2	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
7200 min Winter	1.325	3672
8640 min Winter	1.147	4400
10080 min Winter	1.015	5080

Hayling Island
Permeable Paving
Area 6



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Cascade Summary of Results for 4059 Ph2-Basin 3.srcx

Upstream Structures		Outflow To		Overflow To	
PP Area 6.srcx		(None)		(None)	
Storm Event	Max Level (m)	Max Depth (m)	Max Control (1/s)	Max Volume (m ³)	Status
15 min Summer	3.832	0.232	1.3	52.8	O K
30 min Summer	3.905	0.305	1.3	71.9	O K
60 min Summer	3.981	0.381	1.4	92.7	O K
120 min Summer	4.057	0.457	1.6	114.6	O K
180 min Summer	4.099	0.499	1.6	127.2	O K
240 min Summer	4.126	0.526	1.7	135.5	Flood Risk
360 min Summer	4.160	0.560	1.7	146.2	Flood Risk
480 min Summer	4.176	0.576	1.7	151.1	Flood Risk
600 min Summer	4.179	0.579	1.7	152.2	Flood Risk
720 min Summer	4.177	0.577	1.7	151.6	Flood Risk
960 min Summer	4.170	0.570	1.7	149.4	Flood Risk
1440 min Summer	4.153	0.553	1.7	143.8	Flood Risk
2160 min Summer	4.125	0.525	1.7	135.2	Flood Risk
2880 min Summer	4.098	0.498	1.6	126.8	O K
4320 min Summer	4.047	0.447	1.5	111.5	O K
5760 min Summer	3.999	0.399	1.5	97.8	O K
7200 min Summer	3.955	0.355	1.4	85.4	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
15 min Summer	115.731	109
30 min Summer	77.804	136
60 min Summer	49.937	168
120 min Summer	30.956	214
180 min Summer	23.058	254
240 min Summer	18.577	292
360 min Summer	13.656	370
480 min Summer	10.974	482
600 min Summer	9.254	600
720 min Summer	8.046	698
960 min Summer	6.447	808
1440 min Summer	4.709	1066
2160 min Summer	3.432	1472
2880 min Summer	2.739	1884
4320 min Summer	1.989	2704
5760 min Summer	1.583	3512
7200 min Summer	1.325	4288

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Cascade Summary of Results for 4059 Ph2-Basin 3.srcx

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
8640 min Summer	3.915	0.315	1.3	74.6	O K
10080 min Summer	3.879	0.279	1.3	64.9	O K
15 min Winter	3.858	0.258	1.3	59.6	O K
30 min Winter	3.939	0.339	1.4	81.0	O K
60 min Winter	4.022	0.422	1.5	104.4	O K
120 min Winter	4.106	0.506	1.6	129.3	Flood Risk
180 min Winter	4.152	0.552	1.7	143.7	Flood Risk
240 min Winter	4.182	0.582	1.7	153.2	Flood Risk
360 min Winter	4.221	0.621	1.8	166.0	Flood Risk
480 min Winter	4.243	0.643	1.8	173.3	Flood Risk
600 min Winter	4.251	0.651	1.8	175.9	Flood Risk
720 min Winter	4.252	0.652	1.8	176.3	Flood Risk
960 min Winter	4.246	0.646	1.8	174.0	Flood Risk
1440 min Winter	4.225	0.625	1.8	167.1	Flood Risk
2160 min Winter	4.188	0.588	1.7	155.1	Flood Risk
2880 min Winter	4.150	0.550	1.7	142.9	Flood Risk
4320 min Winter	4.075	0.475	1.6	120.1	O K
5760 min Winter	4.007	0.407	1.5	100.1	O K
7200 min Winter	3.945	0.345	1.4	82.8	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
8640 min Summer	1.147	5080
10080 min Summer	1.015	5848
15 min Winter	115.731	116
30 min Winter	77.804	144
60 min Winter	49.937	178
120 min Winter	30.956	224
180 min Winter	23.058	264
240 min Winter	18.577	302
360 min Winter	13.656	380
480 min Winter	10.974	476
600 min Winter	9.254	586
720 min Winter	8.046	694
960 min Winter	6.447	896
1440 min Winter	4.709	1126
2160 min Winter	3.432	1584
2880 min Winter	2.739	2044
4320 min Winter	1.989	2900
5760 min Winter	1.583	3744
7200 min Winter	1.325	4544

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Cascade Summary of Results for 4059 Ph2-Basin 3.srcx

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m ³)	Status
8640 min Winter	3.889	0.289	1.3	67.7	O K
10080 min Winter	3.836	0.236	1.3	53.8	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
8640 min Winter	1.147	5360
10080 min Winter	1.015	6176

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Cascade Rainfall Details for 4059 Ph2-Basin 3.srcx

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)	19.000	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+30

Time / Area Diagram

Total Area (ha) 0.185

Time	Area
(mins)	(ha)

0-4	0.185
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Cascade Model Details for 4059 Ph2-Basin 3.srcx

Storage is Online Cover Level (m) 4.400

Tank or Pond Structure

Invert Level (m) 3.600

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	205.0	0.650	335.0

Hydro-Brake® Outflow Control

Design Head (m) 0.700 Hydro-Brake® Type Md4 Invert Level (m) 3.550
Design Flow (l/s) 1.8 Diameter (mm) 53

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	1.3	1.200	2.4	3.000	3.8	7.000	5.8
0.200	1.1	1.400	2.6	3.500	4.1	7.500	6.0
0.300	1.2	1.600	2.8	4.000	4.4	8.000	6.2
0.400	1.4	1.800	2.9	4.500	4.6	8.500	6.4
0.500	1.5	2.000	3.1	5.000	4.9	9.000	6.6
0.600	1.7	2.200	3.2	5.500	5.1	9.500	6.7
0.800	2.0	2.400	3.4	6.000	5.4		
1.000	2.2	2.600	3.5	6.500	5.6		