



Sweco UK Limited		Page 1
Grove House Mansion Gate Drive Leeds LS7 4DN	Faversham Crematorium Swale Calcs. Flow Control Orifice 75mm Dia	
Date 21/09/2023 File Faversham-Swale Design_P...	Designed by YP Checked by CH	
Innovyze	Source Control 2020.1.3	

Summary of Results for 100 year Return Period

Half Drain Time : 20 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	20.528	0.448	1.2	6.5	7.8	13.6	Flood Risk
30 min Summer	20.548	0.468	1.4	6.7	8.1	15.4	Flood Risk
60 min Summer	20.548	0.468	1.4	6.8	8.1	15.5	Flood Risk
120 min Summer	20.526	0.446	1.2	6.5	7.8	13.4	Flood Risk
180 min Summer	20.499	0.419	1.1	6.2	7.3	11.3	Flood Risk
240 min Summer	20.473	0.393	1.0	5.9	6.9	9.4	Flood Risk
360 min Summer	20.428	0.348	0.8	5.4	6.2	6.7	Flood Risk
480 min Summer	20.392	0.312	0.6	4.9	5.5	4.9	Flood Risk
600 min Summer	20.364	0.284	0.5	4.5	5.0	3.8	Flood Risk
720 min Summer	20.341	0.261	0.5	4.1	4.6	3.0	Flood Risk
960 min Summer	20.308	0.228	0.4	3.5	3.9	2.1	Flood Risk
1440 min Summer	20.277	0.197	0.3	2.7	3.0	1.4	O K
2160 min Summer	20.257	0.177	0.2	1.9	2.1	1.0	O K
2880 min Summer	20.247	0.167	0.2	1.5	1.7	0.9	O K
4320 min Summer	20.233	0.153	0.2	1.1	1.2	0.7	O K
5760 min Summer	20.225	0.145	0.2	0.8	1.0	0.6	O K
7200 min Summer	20.220	0.140	0.1	0.7	0.8	0.6	O K
8640 min Summer	20.217	0.137	0.1	0.6	0.7	0.5	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	95.597	0.0	18.5	19
30 min Summer	63.251	0.0	24.4	28
60 min Summer	39.883	0.0	30.8	46
120 min Summer	24.286	0.0	37.5	78
180 min Summer	17.915	0.0	41.5	112
240 min Summer	14.343	0.0	44.3	142
360 min Summer	10.460	0.0	48.5	202
480 min Summer	8.358	0.0	51.7	262
600 min Summer	7.018	0.0	54.2	320
720 min Summer	6.081	0.0	56.4	380
960 min Summer	4.846	0.0	59.9	496
1440 min Summer	3.514	0.0	65.2	738
2160 min Summer	2.543	0.0	70.7	1104
2880 min Summer	2.020	0.0	74.9	1472
4320 min Summer	1.457	0.0	81.1	2148
5760 min Summer	1.155	0.0	85.7	2872
7200 min Summer	0.964	0.0	89.3	3592
8640 min Summer	0.831	0.0	92.4	4256

Sweco UK Limited		Page 2
Grove House Mansion Gate Drive Leeds LS7 4DN	Faversham Crematorium Swale Calcs. Flow Control Orifice 75mm Dia	
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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
10080 min Summer	20.215	0.135	0.1	0.5	0.6	0.5	O K
15 min Winter	20.549	0.469	1.4	6.8	8.1	15.5	Flood Risk
30 min Winter	20.570	0.490	1.5	7.0	8.4	17.6	Flood Risk
60 min Winter	20.567	0.487	1.5	6.9	8.4	17.3	Flood Risk
120 min Winter	20.531	0.451	1.3	6.6	7.8	13.9	Flood Risk
180 min Winter	20.492	0.412	1.1	6.1	7.2	10.7	Flood Risk
240 min Winter	20.455	0.375	0.9	5.7	6.6	8.2	Flood Risk
360 min Winter	20.394	0.314	0.6	4.9	5.6	5.0	Flood Risk
480 min Winter	20.350	0.270	0.5	4.3	4.8	3.3	Flood Risk
600 min Winter	20.319	0.239	0.4	3.7	4.1	2.3	Flood Risk
720 min Winter	20.297	0.217	0.3	3.3	3.6	1.8	Flood Risk
960 min Winter	20.276	0.196	0.3	2.7	2.9	1.4	O K
1440 min Winter	20.257	0.177	0.2	1.9	2.1	1.0	O K
2160 min Winter	20.243	0.163	0.2	1.4	1.5	0.8	O K
2880 min Winter	20.233	0.153	0.2	1.1	1.2	0.7	O K
4320 min Winter	20.222	0.142	0.2	0.7	0.9	0.6	O K
5760 min Winter	20.218	0.138	0.1	0.6	0.7	0.5	O K
7200 min Winter	20.214	0.134	0.1	0.5	0.6	0.5	O K
8640 min Winter	20.211	0.131	0.1	0.4	0.5	0.5	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
10080 min Summer	0.733	0.0	95.1	5136
15 min Winter	95.597	0.0	20.7	19
30 min Winter	63.251	0.0	27.4	30
60 min Winter	39.883	0.0	34.5	48
120 min Winter	24.286	0.0	42.0	84
180 min Winter	17.915	0.0	46.5	116
240 min Winter	14.343	0.0	49.6	148
360 min Winter	10.460	0.0	54.3	206
480 min Winter	8.358	0.0	57.9	264
600 min Winter	7.018	0.0	60.7	320
720 min Winter	6.081	0.0	63.1	378
960 min Winter	4.846	0.0	67.1	494
1440 min Winter	3.514	0.0	73.0	742
2160 min Winter	2.543	0.0	79.2	1104
2880 min Winter	2.020	0.0	83.9	1448
4320 min Winter	1.457	0.0	90.8	2192
5760 min Winter	1.155	0.0	95.9	2840
7200 min Winter	0.964	0.0	100.1	3600
8640 min Winter	0.831	0.0	103.5	4376

Sweco UK Limited		Page 3
Grove House Mansion Gate Drive Leeds LS7 4DN	Faversham Crematorium Swale Calcs. Flow Control Orifice 75mm Dia	
Date 21/09/2023 File Faversham-Swale Design_P...	Designed by YP Checked by CH	
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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
10080 min Winter	20.208	0.128	0.1	0.3	0.5	0.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
10080 min Winter	0.733	0.0	106.5	4952

Sweco UK Limited		Page 4
Grove House Mansion Gate Drive Leeds LS7 4DN	Faversham Crematorium Swale Calcs. Flow Control Orifice 75mm Dia	
Date 21/09/2023 File Faversham-Swale Design_P...	Designed by YP Checked by CH	
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Rainfall Details

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)	19.700	Shortest Storm (mins)	15
Ratio R	0.383	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.103

Time (mins)		Area	Time (mins)		Area
From:	To:	(ha)	From:	To:	(ha)
0	4	0.000	4	8	0.103

Sweco UK Limited		Page 5
Grove House Mansion Gate Drive Leeds LS7 4DN	Faversham Crematorium Swale Calcs. Flow Control Orifice 75mm Dia	
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Model Details

Storage is Online Cover Level (m) 20.580

Swale Structure

Infiltration Coefficient Base (m/hr)	0.09300	Length (m)	184.0
Infiltration Coefficient Side (m/hr)	0.09300	Side Slope (1:X)	2.0
Safety Factor	2.0	Slope (1:X)	195.0
Porosity	1.00	Cap Volume Depth (m)	0.000
Invert Level (m)	20.080	Cap Infiltration Depth (m)	0.000
Base Width (m)	0.1		

Orifice Outflow Control

Diameter (m) 0.075 Discharge Coefficient 0.600 Invert Level (m) 20.180