



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 (+40%)

Half Drain Time : 29 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	20.581	0.501	1.5	7.1	8.6	20.1	FLOOD
30 min Summer	20.584	0.504	1.5	7.1	8.7	23.3	FLOOD
60 min Summer	20.585	0.505	1.5	7.1	8.7	24.2	FLOOD
120 min Summer	20.583	0.503	1.5	7.1	8.6	21.9	FLOOD
180 min Summer	20.580	0.500	1.5	7.1	8.6	18.9	FLOOD
240 min Summer	20.557	0.477	1.4	6.8	8.3	16.3	Flood Risk
360 min Summer	20.512	0.432	1.2	6.4	7.5	12.3	Flood Risk
480 min Summer	20.474	0.394	1.0	5.9	6.9	9.5	Flood Risk
600 min Summer	20.441	0.361	0.8	5.6	6.4	7.4	Flood Risk
720 min Summer	20.413	0.333	0.7	5.2	5.9	5.9	Flood Risk
960 min Summer	20.369	0.289	0.5	4.6	5.1	4.0	Flood Risk
1440 min Summer	20.314	0.234	0.4	3.7	4.0	2.2	Flood Risk
2160 min Summer	20.278	0.198	0.3	2.7	3.0	1.4	O K
2880 min Summer	20.263	0.183	0.2	2.1	2.4	1.1	O K
4320 min Summer	20.247	0.167	0.2	1.5	1.7	0.9	O K
5760 min Summer	20.238	0.158	0.2	1.2	1.4	0.8	O K
7200 min Summer	20.230	0.150	0.2	1.0	1.1	0.7	O K
8640 min Summer	20.225	0.145	0.2	0.8	1.0	0.6	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	133.836	1.3	25.8	20
30 min Summer	88.551	4.2	34.2	30
60 min Summer	55.837	5.0	43.1	48
120 min Summer	34.000	2.9	52.5	82
180 min Summer	25.081	0.2	58.1	114
240 min Summer	20.081	0.0	62.0	146
360 min Summer	14.644	0.0	67.9	208
480 min Summer	11.701	0.0	72.3	268
600 min Summer	9.825	0.0	75.9	326
720 min Summer	8.513	0.0	78.9	386
960 min Summer	6.785	0.0	83.9	504
1440 min Summer	4.920	0.0	91.2	740
2160 min Summer	3.561	0.0	99.0	1092
2880 min Summer	2.828	0.0	104.9	1444
4320 min Summer	2.040	0.0	113.5	2200
5760 min Summer	1.617	0.0	119.9	2848
7200 min Summer	1.349	0.0	125.1	3656
8640 min Summer	1.163	0.0	129.4	4272

Sweco UK Limited		Page 2
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 (+40%)

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	20.222	0.142	0.1	0.7	0.9	0.6	O K
15 min Winter	20.584	0.504	1.5	7.1	8.6	23.0	FLOOD
30 min Winter	20.588	0.508	1.5	7.1	8.7	27.0	FLOOD
60 min Winter	20.588	0.508	1.5	7.1	8.7	27.6	FLOOD
120 min Winter	20.585	0.505	1.5	7.1	8.7	23.8	FLOOD
180 min Winter	20.580	0.500	1.5	7.1	8.6	19.2	FLOOD
240 min Winter	20.549	0.469	1.4	6.8	8.1	15.5	Flood Risk
360 min Winter	20.485	0.405	1.0	6.1	7.1	10.2	Flood Risk
480 min Winter	20.433	0.353	0.8	5.5	6.2	7.0	Flood Risk
600 min Winter	20.392	0.312	0.6	4.9	5.5	4.9	Flood Risk
720 min Winter	20.360	0.280	0.5	4.4	5.0	3.6	Flood Risk
960 min Winter	20.316	0.236	0.4	3.7	4.1	2.3	Flood Risk
1440 min Winter	20.278	0.198	0.3	2.7	3.0	1.4	O K
2160 min Winter	20.258	0.178	0.2	2.0	2.2	1.0	O K
2880 min Winter	20.247	0.167	0.2	1.5	1.7	0.9	O K
4320 min Winter	20.234	0.154	0.2	1.1	1.2	0.7	O K
5760 min Winter	20.225	0.145	0.2	0.8	1.0	0.6	O K
7200 min Winter	20.221	0.141	0.1	0.7	0.8	0.6	O K
8640 min Winter	20.218	0.138	0.1	0.6	0.7	0.5	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
10080 min Summer	1.026	0.0	133.1	5064
15 min Winter	133.836	4.0	28.9	20
30 min Winter	88.551	7.5	38.3	33
60 min Winter	55.837	8.1	48.3	50
120 min Winter	34.000	4.6	58.8	88
180 min Winter	25.081	0.5	65.1	122
240 min Winter	20.081	0.0	69.5	154
360 min Winter	14.644	0.0	76.0	214
480 min Winter	11.701	0.0	81.0	274
600 min Winter	9.825	0.0	85.0	330
720 min Winter	8.513	0.0	88.4	388
960 min Winter	6.785	0.0	93.9	504
1440 min Winter	4.920	0.0	102.2	734
2160 min Winter	3.561	0.0	110.9	1096
2880 min Winter	2.828	0.0	117.4	1476
4320 min Winter	2.040	0.0	127.1	2192
5760 min Winter	1.617	0.0	134.3	2936
7200 min Winter	1.349	0.0	140.1	3664
8640 min Winter	1.163	0.0	144.9	4416

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	
Innovyze	Source Control 2020.1.3	

Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m <sup>3</sup> )	Status
10080 min Winter	20.216	0.136	0.1	0.5	0.6	0.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m <sup>3</sup> )	Discharge Volume (m <sup>3</sup> )	Time-Peak (mins)
10080 min Winter	1.026	0.0	149.1	5104

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	
Innovyze	Source Control 2020.1.3	


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 %	+40

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	
Date 21/09/2023 File Faversham-Swale Design_P...	Designed by YP Checked by CH	
Innovyze	Source Control 2020.1.3	

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