

Company: Colin Toms & Partners Suffolk House, 154 High Street Sevenoaks, TN13 1XE	Date: 17/07/2025		
	Designed by: SV	Checked by: LB	Approved By: LB
Report Details: Type: Stormwater Controls Storm Phase: Phase (1)	Project: A9307 - Mid Sussex Parks (Hemsleys Meadows and Finches Field) Surface Water Network		



Basin (2)

Type : Pond

Dimensions

Exceedance Level (m)	141.190
Depth (m)	0.540
Base Level (m)	140.650
Freeboard (mm)	300
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	6.007
Total Volume (m³)	145.133

Depth (m)	Area (m²)	Volume (m³)
0.000	543.00	0.000
0.540	844.00	371.515

Advanced

Side Infiltration Rate (m/hr)	0.0018
Safety Factor	2.0
Perimeter	Circular
Length (m)	85.423
Friction Scheme	Manning's n
n	0.035



Basin (1)

Type : Pond

Dimensions

Exceedance Level (m)	141.250
Depth (m)	0.600
Base Level (m)	140.650
Freeboard (mm)	300
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	12.16
Total Volume (m³)	67.528

Depth (m)	Area (m²)	Volume (m³)
0.000	84.30	0.000
0.050	197.00	6.836
0.200	248.00	40.138
0.600	489.00	184.837

Advanced

Side Infiltration Rate (m/hr)	0.0018
Safety Factor	2.0
Perimeter	Circular
Length (m)	39.532
Friction Scheme	Manning's n
n	0.035

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Swale (1)

Type : Swale

Swale

Exceedance Level (m)	140.900
Depth (m)	0.600
Base Level (m)	140.300
Top Width (m)	4.600
Side Slope (1:X)	3.00
Base Width (m)	1.000
Freeboard (mm)	300
Length (m)	152.299
Long. Slope (1:X)	10000.00
Filtration Rate (m/hr)	0.0018
Friction Scheme	Manning's n
n	0.035
Total Volume (m³)	86.810

Advanced

Safety Factor	2.0
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Swale

Base Infiltration Rate (m/hr)	0.0018
Side Infiltration Rate (m/hr)	0.0018
Porosity (%)	100

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Report Details: Type: Connections Storm Phase: Phase (1)		Project: A9307 - Mid Sussex Parks (Hemsleys Meadows and Finches Field) Surface Water Network			

Name	Length (m)	Connection Type	Slope (1:X)	Manning's n	Colebrook-White Roughness (mm)	Diameter / Base Width (mm)	Upstream Cover Level (m)	Upstream Invert Level (m)
Pipe (1)	7.421	Pipe	37.104		0.6	150	141.190	140.850
Pipe (2)	9.684	Pipe	96.844		0.6	100	141.250	140.850
Pipe	22.134	Pipe	-221.340		0.6	150	141.250	140.650

Name	Downstream Cover Level (m)	Downstream Invert Level (m)	Lock
Pipe (1)	140.915	140.650	All
Pipe (2)	140.915	140.750	All
Pipe	141.190	140.750	All

Company: Colin Toms & Partners Suffolk House, 154 High Street Sevenoaks, TN13 1XE	Date: 17/07/2025		
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Report Details: Type: Inflow Summary Storm Phase: Phase (1)	Project: A9307 - Mid Sussex Parks (Hemsleys Meadows and Finches Field) Surface Water Network		



Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Catchment Area	Swale (1)		Time of Concentration	0.070	100	0	100	0.070
Catchment Area A	Basin (1)		Time of Concentration	0.501	80	0	80	0.400
Catchment Area B	Basin (2)		Time of Concentration	0.293	80	0	80	0.235
TOTAL		0.0		0.864				0.705

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Report Details: Type: Network Design Criteria Storm Phase: Phase (1)	Project: A9307 - Mid Sussex Parks (Hemsleys Meadows and Finches Field) Surface Water Network		



Flow Options

Peak Flow Calculation	(UK) Modified Rational Method
Min. Time of Entry (mins)	5
Max. Travel Time (mins)	30

Pipe Options

Lock Slope Options	None
Design Options	Minimise Excavation
Design Level	Level Soffits
Min. Slope (1:X)	500.00
Max. Slope (1:X)	40.00
Min. Velocity (m/s)	1.0
Max. Velocity (m/s)	3.0
Use Flow Restriction	☐
Reduce Channel Depths	☐

Manhole Options

Apply Offset	☐
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Company: Colin Toms & Partners Suffolk House, 154 High Street Sevenoaks, TN13 1XE	Date: 17/07/2025		
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Report Title: Rainfall Analysis Criteria	Project: A9307 - Mid Sussex Parks (Hemsleys Meadows and Finches Field) Surface Water Network		



Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall

FEH

Type: FEH

Site Location	GB 525799 132763 TQ 25799 32763
Rainfall Version	2013
Data Type	Point
Summer	☒
Winter	☒

Return Period

Return Period (years)	Increase Rainfall (%)
10.0	0.000
30.0	0.000
100.0	0.000
100.0	40.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
240	480
360	720
480	960
960	1920
1440	2880

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**FEH: 10 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max.
US Depth**

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)
Basin (2)	FEH: 10 years: +0 %: 1440 mins: Winter	140.754	140.754	0.104	0.104	2.0	59.310	0.000	0.000	0.0	3.638		59.134
Basin (1)	FEH: 10 years: +0 %: 240 mins: Winter	140.803	140.803	0.153	0.153	11.3	28.887	0.000	0.000	2.4	17.195	199	57.223
Swale (1)	FEH: 10 years: +0 %: 1440 mins: Winter	140.456	140.456	0.141	0.156	1.1	32.640	0.000	6.398	0.0	0.000	7179	62.401

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**FEH: 30 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max.
US Depth**

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residant Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)
Basin (2)	FEH: 30 years: +0 %: 1440 mins: Winter	140.777	140.777	0.127	0.127	2.6	72.739	0.000	0.000	0.0	4.717		49.881
Basin (1)	FEH: 30 years: +0 %: 480 mins: Summer	140.816	140.816	0.166	0.166	12.9	31.860	0.000	0.000	3.4	33.057	158	52.820
Swale (1)	FEH: 30 years: +0 %: 1440 mins: Winter	140.485	140.484	0.169	0.184	1.3	41.199	0.000	6.419	0.0	0.000	9074	52.541

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**FEH: 100 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max.
US Depth**

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)
Basin (2)	FEH: 100 years: +0 %: 1440 mins: Winter	140.808	140.808	0.158	0.158	3.4	92.056	0.000	0.000	0.0	3.898		36.571
Basin (1)	FEH: 100 years: +0 %: 480 mins: Summer	140.830	140.830	0.180	0.180	12.8	35.189	0.000	0.000	4.6	40.896	135	47.891
Swale (1)	FEH: 100 years: +0 %: 1440 mins: Winter	140.521	140.521	0.206	0.221	1.7	53.412	0.000	6.434	0.0	0.000	1177	38.473

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**FEH: 100 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By:
Max. US Depth**

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)
Basin (2)	FEH: 100 years: +40 %: 1440 mins: Summer	140.860	140.860	0.210	0.210	6.9	125.447	0.000	0.000	0.3	10.702	8291	13.564
Basin (1)	FEH: 100 years: +40 %: 360 mins: Summer	140.865	140.865	0.215	0.215	14.5	43.878	0.000	0.000	6.9	50.773	1020	35.022
Swale (1)	FEH: 100 years: +40 %: 1440 mins: Winter	140.599	140.599	0.284	0.299	2.3	83.258	0.000	6.455	0.0	0.000	18444	4.092

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