


Proposed Surface Water Calculations: 311052 - Airlie Medical Centre Methil	Date: 17/10/2023			
	Designed by: RF	Checked by: CC	Approved By: CC	
Report Details: Type: Network Design Criteria Storm Phase: Phase	Harley Haddow: 45 West Nile Street Glasgow			

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. Cover Depth (m)	1.200
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	<input type="checkbox"/>
Reduce Channel Depths	<input type="checkbox"/>

Pipe Size Library

Default

Add. Increment (mm)	75
Max. Diameter (mm)	0

Diameter (mm)	Min. Slope (1:X)	Max. Slope (1:X)
100	0.00	0.00
150	0.00	0.00

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Manhole Options

Apply Offset

Manhole Size Library

Default

Diameter / Width

Connection (mm)	Diameter / Length (m)	Width (m)
0	1.200	0.000
375	1.350	0.000
500	1.500	0.000
750	1.800	0.000

Additional Sizing

Connection (mm)	900
Diameter / Length (m)	0.900
Width (m)	0.000

Depth


Depth (m)	Diameter / Length (m)	Width (m)
0.000	1.050	0.000
1.500	1.200	0.000

Access

Depth (m)	Ladder Protrusion (mm)
0.000	130
3.000	230

Benching Requirements

Landing Width (mm)	500
Benching Width (mm)	225

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Report Details: Type: Outfall Details Storm Phase: Phase	Harley Haddow: 45 West Nile Street Glasgow			

Outfalls

Outfall	Outfall Type	Fixed Surcharged Level (m)	Level Curve
EX MH SW1	Free Discharge		

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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	<input type="checkbox"/>

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Report Details: Type: Junctions Summary Storm Phase: Phase	Harley Haddow: 45 West Nile Street Glasgow		



FEH: 200 years: Increase Rainfall (%): +39: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
EX MH SW6	FEH: 200 years: +39 %: 600 mins: Winter	4.600	3.175	4.286	1.111	3.9	1.257	0.000	3.7	56.296	Surcharged
EX MH SW7	FEH: 200 years: +39 %: 600 mins: Winter	4.320	2.895	4.286	1.391	8.6	1.573	0.000	3.5	178.645	Flood Risk
EX MH SW9	FEH: 200 years: +39 %: 120 mins: Winter	4.500	2.535	3.448	0.913	10.2	1.033	0.000	9.2	60.915	Surcharged
EX MH SW10	FEH: 200 years: +39 %: 120 mins: Winter	3.760	2.530	3.448	0.918	9.2	1.038	0.000	9.0	59.944	Surcharged
EX MH SW1	FEH: 200 years: +39 %: 240 mins: Winter	3.760	2.350	2.433	0.083	9.0	0.000	0.000	9.0	103.394	OK
EX MH SW8	FEH: 200 years: +39 %: 120 mins: Winter	4.260	2.760	3.451	0.691	10.2	0.782	0.000	8.6	40.062	Surcharged
EX MH SW3	FEH: 200 years: +39 %: 600 mins: Winter	4.750	3.500	4.287	0.787	2.4	0.890	0.000	2.4	33.782	Surcharged
EX MH SW2	FEH: 200 years: +39 %: 600 mins: Winter	4.850	3.730	4.287	0.557	2.4	0.630	0.000	2.4	33.706	Surcharged
EX MH SW4	FEH: 200 years: +39 %: 600 mins: Winter	4.820	3.355	4.286	0.931	3.1	1.053	0.000	3.1	44.924	Surcharged
S1	FEH: 200 years: +39 %: 120 mins: Winter	4.320	3.000	3.451	0.451	4.3	0.510	0.000	4.3	12.489	Surcharged
S2	FEH: 200 years: +39 %: 120 mins: Winter	4.480	2.850	3.451	0.601	4.3	0.680	0.000	4.2	12.489	Surcharged

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FEH: 200 years: Increase Rainfall (%): +39: Critical Storm Per Item: Rank By: Max. Avg. 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)	Percentage Available (%)	Status
Porous Paving	FEH: 200 years: +39 %: 600 mins: Winter	4.286	4.286	0.126	0.136	1.6	1.970	0.000	0.000	0.9	5.465	61.821	OK
Porous Paving (1)	FEH: 200 years: +39 %: 15 mins: Winter	4.391	4.318	0.076	0.018	3.8	1.182	0.000	0.000	2.1	1.318	84.705	OK
Porous Paving (2)	FEH: 200 years: +39 %: 30 mins: Winter	4.067	3.833	0.230	0.023	8.0	5.319	0.000	0.000	3.7	6.188	63.081	OK
Porous Paving (3)	FEH: 200 years: +39 %: 30 mins: Winter	4.130	3.778	0.340	0.018	11.0	7.690	0.000	0.000	4.5	8.291	56.660	OK
Cellular Storage	FEH: 200 years: +39 %: 600 mins: Winter	4.286	4.286	1.361	1.361	6.7	60.711	0.000	0.000	1.9	53.342	0.460	OK

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FEH: 200 years: Increase Rainfall (%): +39: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
Exsw6 to Exsw7	FEH: 200 years: +39 %: 15 mins: Winter	Pipe	EX MH SW6	EX MH SW7	4.600	3.295	0.200	14.840	0.7	0.56	27.2	OK
Exsw7 to Exsw9	FEH: 200 years: +39 %: 600 mins: Winter	Pipe	EX MH SW7	EX MH SW9	4.320	4.286	0.141	117.758	0.3	0.02	3.5	Flood Risk
Exsw2 to Exsw3	FEH: 200 years: +39 %: 15 mins: Summer	Pipe	EX MH SW2	EX MH SW3	4.850	3.855	0.137	8.447	1.1	0.92	18.8	OK
Exsw3 to Exsw4	FEH: 200 years: +39 %: 15 mins: Winter	Pipe	EX MH SW3	EX MH SW4	4.750	3.668	0.121	9.458	1.2	1.13	17.6	Surcharged
Exsw4 to Exsw7	FEH: 200 years: +39 %: 15 mins: Winter	Pipe	EX MH SW4	EX MH SW7	4.820	3.429	0.177	12.563	0.7	0.25	23.8	OK
Exsw8 to Exsw9	FEH: 200 years: +39 %: 15 mins: Winter	Pipe	EX MH SW8	EX MH SW9	4.260	2.896	0.247	11.982	0.5	0.15	11.7	OK
Exsw9 to Exsw10	FEH: 200 years: +39 %: 120 mins: Winter	Pipe	EX MH SW9	EX MH SW10	4.500	3.448	0.300	60.126	0.1	0.28	9.2	Surcharged
Exsw10 to Exsw1	FEH: 200 years: +39 %: 240 mins: Winter	Pipe	EX MH SW10	EX MH SW1	3.760	3.312	0.085	103.394	0.9	0.6	9.0	Surcharged
Pipe	FEH: 200 years: +39 %: 30 mins: Winter	Pipe	Porous Paving	EX MH SW6	4.610	4.186	0.057	1.359	0.3	0.02	1.5	OK
Pipe (1)	FEH: 200 years: +39 %: 15 mins: Winter	Pipe	Porous Paving (1)	EX MH SW6	4.765	4.352	0.062	1.318	0.7	0.03	2.1	OK
Pipe (2)	FEH: 200 years: +39 %: 60 mins: Summer	Pipe	Porous Paving (2)	EX MH SW8	4.287	3.927	0.150	7.755	0.4	0.06	3.7	OK
Pipe (3)	FEH: 200 years: +39 %: 60 mins: Winter	Pipe	Porous Paving (3)	EX MH SW8	4.290	3.924	0.150	12.161	0.6	0.04	4.6	Surcharged
Pipe (4)	FEH: 200 years: +39 %: 15 mins: Winter	Pipe	S1	S2	4.320	3.070	0.076	6.098	1.1	0.18	13.0	OK
Pipe (5)	FEH: 200 years: +39 %: 15 mins: Winter	Pipe	S2	EX MH SW8	4.480	2.932	0.091	6.011	1.0	0.24	12.6	OK

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Pipe (6)	FEH: 200 years: +39 %: 120 mins: Winter	Pipe	Cellular Storage	EX MH SW7	4.566	3.761	0.300	0.000	0.0	0.03	2.7	Surcharged
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