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No. 8 Oak Green Stanley Green Business Park Earl Rd, Cheadle Hulme, SK8	8755 Windermere Close Openshaw	
Date March 2020 File SW Network P1.MDX	Designed by RH Checked by KPT	
Innovyze Network 2014.1.1		

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S1.004	S	56.290	54.893	0.000	1200	0

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha	Storage 2.000
Hot Start (mins)	0	Inlet Coefficient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1
Number of Input Hydrographs		0	Number of Storage Structures
Number of Online Controls		1	Number of Time/Area Diagrams
Number of Offline Controls		0	Number of Real Time Controls

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	2	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.000	Storm Duration (mins)	30
Ratio R	0.362		

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Online Controls for Storm

Hydro-Brake Optimum® Manhole: S7, DS/PN: S1.003, Volume (m³): 3.3

Unit Reference MD-SHE-0102-5000-1225-5000
Design Head (m) 1.225
Design Flow (l/s) 5.0
Flush-Flo™ Calculated
Objective Minimise upstream storage
Diameter (mm) 102
Invert Level (m) 54.992
Minimum Outlet Pipe Diameter (mm) 150
Suggested Manhole Diameter (mm) 1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.225	5.0	Kick-Flo®	0.762	4.0
Flush-Flo™	0.363	5.0	Mean Flow over Head Range	-	4.4

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake Optimum® as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	3.4	1.200	4.9	3.000	7.6	7.000	11.3
0.200	4.7	1.400	5.3	3.500	8.2	7.500	11.7
0.300	5.0	1.600	5.7	4.000	8.7	8.000	12.1
0.400	5.0	1.800	6.0	4.500	9.2	8.500	12.4
0.500	4.9	2.000	6.3	5.000	9.7	9.000	12.8
0.600	4.7	2.200	6.6	5.500	10.1	9.500	13.1
0.800	4.1	2.400	6.8	6.000	10.5		
1.000	4.5	2.600	7.1	6.500	11.0		

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Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria			
Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	2.000
Hot Start Level (mm)	0	Inlet Coefficient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		
Number of Input Hydrographs	0	Number of Storage Structures	0
Number of Online Controls	1	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0
Synthetic Rainfall Details			
Rainfall Model	FSR	Ratio R	0.362
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	18.000	Cv (Winter)	0.840
Margin for Flood Risk Warning (mm)	300.0	DVD Status	ON
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		
Profile(s)	Summer and Winter		
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 5760, 7200, 8640, 10080		
Return Period(s) (years)	100		
Climate Change (%)	40		

PN	Storm	Return Period	Climate Change	First X Surge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
S1.000	30 Winter	100	+40%	100/15 Winter				
S1.001	30 Winter	100	+40%	100/15 Summer				
S2.000	30 Winter	100	+40%	100/15 Winter				
S1.002	30 Winter	100	+40%	100/15 Summer				
S3.000	30 Winter	100	+40%	100/15 Winter				
S3.001	30 Winter	100	+40%	100/15 Summer				
S1.003	30 Winter	100	+40%	100/15 Summer				
S1.004	30 Winter	100	+40%					

		Water		Flooded		Pipe		Status
PN	US/MH Name	Level (m)	Surched Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	
S1.000	S1	56.317	0.517	0.000	0.34	0.0	3.0	FLOOD RISK
S1.001	S2	56.312	0.750	0.000	0.03	0.0	4.8	FLOOD RISK
S2.000	S3	56.321	0.321	0.000	0.39	0.0	5.1	SURCHARGED
S1.002	S4	56.312	0.826	0.000	0.04	0.0	4.7	SURCHARGED
S3.000	S5	56.334	0.384	0.000	0.59	0.0	4.3	SURCHARGED
S3.001	S6	56.326	0.535	0.000	0.86	0.0	8.6	SURCHARGED
S1.003	S7	56.311	1.169	0.000	0.43	0.0	5.1	SURCHARGED
S1.004	S8	55.016	-0.089	0.000	0.34	0.0	5.1	OK

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