

Considine Limited		Page 1																																																																																																																			
25 Hollingworth Court Kent ME14 5PP	ASHLEY AVENUE, FOLKESTONE PRELIMINARY STORAGE MODEL 1 - 100 YEAR (FEH)																																																																																																																				
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Innovyze	Network 2018.1																																																																																																																				
STORM SEWER DESIGN by the Modified Rational Method Design Criteria for Storm Pipe Sizes STANDARD Manhole Sizes STANDARD FEH Rainfall Model Return Period (years)2 FEH Rainfall Version2013 Site Location GB 610951 166136 Data TypePoint Maximum Rainfall (mm/hr)50 Maximum Time of Concentration (mins)30 Foul Sewage (l/s/ha)0.000 Volumetric Runoff Coeff.0.750 PIMP (%)100 Add Flow / Climate Change (%)0 Minimum Backdrop Height (m)0.200 Maximum Backdrop Height (m)1.500 Min Design Depth for Optimisation (m)1.200 Min Vel for Auto Design only (m/s)1.00 Min Slope for Optimisation (1:X)500 Designed with Level Soffits																																																																																																																					
Network Design Table for Storm <table><tr><th>PN</th><th>Length (m)</th><th>Fall (m)</th><th>Slope (1:X)</th><th>I.Area (ha)</th><th>T.E. (mins)</th><th>Base Flow (l/s)</th><th>k (mm)</th><th>HYD SECT</th><th>DIA (mm)</th><th>Section Type</th><th>Auto Design</th></tr><tr><td>S1.000</td><td>3.853</td><td>0.015</td><td>256.9</td><td>0.082</td><td>6.00</td><td>0.0</td><td>0.600</td><td>o</td><td>300</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S1.001</td><td>12.056</td><td>0.050</td><td>241.1</td><td>0.048</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>300</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S1.002</td><td>3.511</td><td>0.015</td><td>234.1</td><td>0.000</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>300</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S1.003</td><td>1.000</td><td>0.001</td><td>1000.0</td><td>0.000</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>300</td><td>Pipe/Conduit</td><td></td></tr></table> Network Results Table <table><tr><th>PN</th><th>Rain (mm/hr)</th><th>T.C. (mins)</th><th>US/IL (m)</th><th>Σ I.Area (ha)</th><th>Σ Base Flow (l/s)</th><th>Foul (l/s)</th><th>Add Flow (l/s)</th><th>Vel (m/s)</th><th>Cap (l/s)</th><th>Flow (l/s)</th></tr><tr><td>S1.000</td><td>50.00</td><td>6.07</td><td>42.440</td><td>0.082</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.98</td><td>69.0</td><td>11.1</td></tr><tr><td>S1.001</td><td>50.00</td><td>6.27</td><td>42.425</td><td>0.130</td><td>0.0</td><td>0.0</td><td>0.0</td><td>1.01</td><td>71.3</td><td>17.6</td></tr><tr><td>S1.002</td><td>50.00</td><td>6.32</td><td>42.375</td><td>0.130</td><td>0.0</td><td>0.0</td><td>0.0</td><td>1.02</td><td>72.3</td><td>17.6</td></tr><tr><td>S1.003</td><td>50.00</td><td>6.36</td><td>42.360</td><td>0.130</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.49</td><td>34.6</td><td>17.6</td></tr></table> ©1982-2018 Innovyze			PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design	S1.000	3.853	0.015	256.9	0.082	6.00	0.0	0.600	o	300	Pipe/Conduit		S1.001	12.056	0.050	241.1	0.048	0.00	0.0	0.600	o	300	Pipe/Conduit		S1.002	3.511	0.015	234.1	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit		S1.003	1.000	0.001	1000.0	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit		PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	S1.000	50.00	6.07	42.440	0.082	0.0	0.0	0.0	0.98	69.0	11.1	S1.001	50.00	6.27	42.425	0.130	0.0	0.0	0.0	1.01	71.3	17.6	S1.002	50.00	6.32	42.375	0.130	0.0	0.0	0.0	1.02	72.3	17.6	S1.003	50.00	6.36	42.360	0.130	0.0	0.0	0.0	0.49	34.6	17.6
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Innovyze	Network 2018.1					
<u>Online Controls for Storm</u> <u>Pump Manhole: S4, DS/PN: S1.003, Volume (m³): 3.6</u> Invert Level (m) 42.360 <table><thead><tr><th>Depth (m)</th><th>Flow (l/s)</th></tr></thead><tbody><tr><td>1.000</td><td>4.0000</td></tr></tbody></table>			Depth (m)	Flow (l/s)	1.000	4.0000
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Storage Structures for Storm Cellular Storage Manhole: S1, DS/PN: S1.000 Invert Level (m) 42.440 Safety Factor 2.0 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95 Infiltration Coefficient Side (m/hr) 0.00000 <table><thead><tr><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th></tr></thead><tbody><tr><td>0.000</td><td>70.0</td><td>70.0</td><td>1.201</td><td>0.0</td><td>110.2</td></tr><tr><td>1.200</td><td>70.0</td><td>110.2</td><td></td><td></td><td></td></tr></tbody></table>			Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	0.000	70.0	70.0	1.201	0.0	110.2	1.200	70.0	110.2			
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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 1
 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 FEH Data Type Point
 FEH Rainfall Version 2013 Cv (Summer) 0.750
 Site Location GB 620404 137167 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0
 Analysis Timestep 2.5 Second Increment (Extended)
 DTS Status ON
 DVD Status OFF
 Inertia Status OFF

Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
 Return Period(s) (years) 100
 Climate Change (%) 40

									Water
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Level (m)
S1.000	S1	480 Winter	100	+40%	100/15 Summer				43.396
S1.001	S2	480 Winter	100	+40%	100/15 Summer				43.513
S1.002	S3	480 Winter	100	+40%	100/15 Summer				43.615
S1.003	S4	480 Winter	100	+40%	100/15 Summer				43.645

		Surcharged		Flooded	Pipe		Level	
PN	US/MH Name	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Exceeded
S1.000	S1	0.656	0.000	0.33		16.2	SURCHARGED	
S1.001	S2	0.788	0.000	0.23		13.3	SURCHARGED	
S1.002	S3	0.940	0.000	0.18		8.7	SURCHARGED	
S1.003	S4	0.985	0.000	0.07		3.8	SURCHARGED	