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11 Tungsten Building George Street Fishersgate BN41 1RA	Manor Nursery Angmering West Sussex	
Date 28/06/2019 File Planning Network File.MDX	Designed by S Burgess Checked by SRD	
Innovyze	Network 2017.1.2	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for NETWORK 3.SWS

Pipe Sizes NETWORK 9 Manhole Sizes NETWORK 9

FSR Rainfall Model - England and Wales

Return Period (years)	2	PIMP (%)	100
M5-60 (mm)	19.600	Add Flow / Climate Change (%)	0
Ratio R	0.350	Minimum Backdrop Height (m)	0.500
Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	1.000
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	0.75
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Network Design Table for NETWORK 3.SWS

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
1.000	4.084	0.040	102.9	0.015	5.00	0.0	0.600	o	100	Pipe/Conduit	
1.001	12.407	0.121	103.0	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
2.000	14.607	0.485	30.1	0.010	5.00	0.0	0.600	o	100	Pipe/Conduit	
2.001	1.217	0.356	3.4	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
1.002	3.389	0.033	103.0	0.015	0.00	0.0	0.600	o	100	Pipe/Conduit	

Network Results Table

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)
1.000	50.00	5.09	14.566	0.015	0.0	0.0	0.0	0.76	6.0	2.0
1.001	50.00	5.36	14.526	0.015	0.0	0.0	0.0	0.76	5.9	2.0
2.000	50.00	5.17	15.247	0.010	0.0	0.0	0.0	1.41	11.1	1.4
2.001	50.00	5.18	14.762	0.010	0.0	0.0	0.0	4.21	33.1	1.4
1.002	50.00	5.44	14.406	0.040	0.0	0.0	0.0	0.76	5.9	5.4

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PIPELINE SCHEDULES for NETWORK 3.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	100	1	15.866	14.566	1.200	Open Manhole	1200
1.001	o	100	2	15.961	14.526	1.335	Open Manhole	1200
2.000	o	100	5	16.547	15.247	1.200	Open Manhole	1200
2.001	o	100	6	16.264	14.762	1.402	Open Manhole	1200
1.002	o	100	3	16.291	14.406	1.785	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	4.084	102.9	2	15.961	14.526	1.335	Open Manhole	1200
1.001	12.407	103.0	3	16.291	14.406	1.785	Open Manhole	1200
2.000	14.607	30.1	6	16.264	14.762	1.402	Open Manhole	1200
2.001	1.217	3.4	3	16.291	14.406	1.785	Open Manhole	1200
1.002	3.389	103.0	4	16.375	14.373	1.902	Open Manhole	0

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Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 3.SWS

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	0	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	0.350
Region England and Wales	Cv (Summer)		0.750
M5-60 (mm)	19.500	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	1	15 Winter	100	+40%	100/15	Summer			15.104
1.001	2	15 Winter	100	+40%	100/15	Summer			15.036
2.000	5	15 Winter	100	+40%					15.300
2.001	6	15 Winter	100	+40%	100/15	Summer			14.922
1.002	3	15 Winter	100	+40%	100/15	Summer			14.893

PN	US/MH Name	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	1	0.438	0.000	1.29		6.5	SURCHARGED	
1.001	2	0.410	0.000	1.25		7.0	SURCHARGED	
2.000	5	-0.047	0.000	0.55		5.7	OK	
2.001	6	0.060	0.000	0.31		5.2	SURCHARGED	
1.002	3	0.387	0.000	3.55		17.5	SURCHARGED	

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