Design Settings

Rainfall Methodology	FSR
Return Period (years)	2
Additional Flow (%)	0
FSR Region	England and Wales
M5-60 (mm)	18.000
Ratio-R	0.357
CV	1.000
Time of Entry (mins)	5.00
Maximum Time of Concentration (mins)	30.00
Maximum Rainfall (mm/hr)	50.0
Minimum Velocity (m/s)	1.00
Connection Type	Level Soffits
Minimum Backdrop Height (m)	0.200
Preferred Cover Depth (m)	1.200
Include Intermediate Ground	✓
Enforce best practice design rules	✓

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Width (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
OU 2	0.055	5.00	64.450	2100	300	388261.594	396886.854	0.300	64.150
W01A			64.510	1200		388257.353	396877.714	0.750	63.760
OU 1	0.022	5.00	64.356	300	300	388249.680	396887.411	0.356	64.000
W01	0.019	5.00	64.370	1200		388244.433	396873.384	1.200	63.170
W02			64.570	1200		388242.105	396865.867	1.534	63.036
W03		5.00	64.470	600		388251.697	396874.379	1.620	62.850
TANK			64.300			388244.104	396860.613	1.716	62.584
W04			64.380	600		388243.401	396859.338	1.804	62.576
W05			64.490	1200		388239.060	396855.503	2.040	62.450
W06			64.462	1200		388238.179	396852.455	2.132	62.330
EX BS4			64.375	1200		388237.159	396848.964	2.245	62.130

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	OU 2	W01A	10.076	0.600	64.150	63.762	0.388	26.0	150	5.08	50.0
1.001	W01A	W01	13.626	0.600	63.760	63.170	0.590	23.1	150	5.19	50.0
4.000	OU 1	W01	5.241	0.600	64.000	63.170	0.830	6.3	150	5.02	50.0
4.001	W01	W02	8.438	0.600	63.170	63.036	0.134	63.0	225	5.28	50.0
4.002	W02	W05	12.708	0.600	63.036	62.525	0.511	24.9	225	5.36	50.0
6.000	W03	TANK	14.004	0.600	62.850	62.794	0.056	250.1	300	5.24	50.0
6.001	TANK	W04	2.057	0.600	62.584	62.576	0.008	257.1	300	5.27	50.0
6.002	W04	W05	9.200	0.600	62.576	62.450	0.126	73.0	300	5.35	50.0
4.003	W05	W06	3.172	0.600	62.450	62.330	0.120	26.4	150	5.39	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.000	1.982	35.0	9.9	0.150	0.598	0.055	0.0
1.001	2.104	37.2	9.9	0.600	1.050	0.055	0.0
4.000	4.036	71.3	4.0	0.206	1.050	0.022	0.0
4.001	1.651	65.6	17.3	0.975	1.309	0.096	0.0
4.002	2.634	104.7	17.3	1.309	1.740	0.096	0.0
6.000	0.989	69.9	0.0	1.320	1.206	0.000	0.0
6.001	0.976	69.0	0.0	1.416	1.504	0.000	0.0
6.002	1.842	130.2	0.0	1.504	1.740	0.000	0.0
4.003	1.966	34.7	17.3	1.890	1.982	0.096	0.0

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Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
4.004	W06	EX BS4	3.637	0.600	62.330	62.130	0.200	18.2	150	5.41	50.0

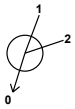
Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
4.004	2.373	41.9	17.3	1.982	2.095	0.096	0.0

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	10.076	26.0	150	1 STANDARD	64.450	64.150	0.150	64.510	63.762	0.598
1.001	13.626	23.1	150	1 STANDARD	64.510	63.760	0.600	64.370	63.170	1.050
4.000	5.241	6.3	150	1 STANDARD	64.356	64.000	0.206	64.370	63.170	1.050
4.001	8.438	63.0	225	1 STANDARD	64.370	63.170	0.975	64.570	63.036	1.309
4.002	12.708	24.9	225	1 STANDARD	64.570	63.036	1.309	64.490	62.525	1.740
6.000	14.004	250.1	300	1 STANDARD	64.470	62.850	1.320	64.300	62.794	1.206
6.001	2.057	257.1	300	1 STANDARD	64.300	62.584	1.416	64.380	62.576	1.504
6.002	9.200	73.0	300	1 STANDARD	64.380	62.576	1.504	64.490	62.450	1.740
4.003	3.172	26.4	150	1 STANDARD	64.490	62.450	1.890	64.462	62.330	1.982
4.004	3.637	18.2	150	1 STANDARD	64.462	62.330	1.982	64.375	62.130	2.095

Link	US Node	Dia (mm)	Width (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	OU 2	2100	300	Manhole	1 STANDARD	W01A	1200	Manhole	1 STANDARD
1.001	W01A	1200		Manhole	1 STANDARD	W01	1200	Manhole	1 STANDARD
4.000	OU 1	300	300	Manhole	1 STANDARD	W01	1200	Manhole	1 STANDARD
4.001	W01	1200		Manhole	1 STANDARD	W02	1200	Manhole	1 STANDARD
4.002	W02	1200		Manhole	1 STANDARD	W05	1200	Manhole	1 STANDARD
6.000	W03	600		Manhole	1 STANDARD	TANK		Junction	
6.001	TANK			Junction		W04	600	Manhole	1 STANDARD
6.002	W04	600		Manhole	1 STANDARD	W05	1200	Manhole	1 STANDARD
4.003	W05	1200		Manhole	1 STANDARD	W06	1200	Manhole	1 STANDARD
4.004	W06	1200		Manhole	1 STANDARD	EX BS4	1200	Manhole	1 STANDARD

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Width (mm)	Connections	Link	IL (m)	Dia (mm)
OU 2	388261.594	396886.854	64.450	0.300	2100	300				
							0	1.000	64.150	150
W01A	388257.353	396877.714	64.510	0.750	1200					
							1	1.000	63.762	150
							0	1.001	63.760	150
OU 1	388249.680	396887.411	64.356	0.356	300	300				
							0	4.000	64.000	150
W01	388244.433	396873.384	64.370	1.200	1200					
							1	4.000	63.170	150
							2	1.001	63.170	150
							0	4.001	63.170	225
W02	388242.105	396865.867	64.570	1.534	1200					
							1	4.001	63.036	225
							0	4.002	63.036	225

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Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Width (mm)	Connections	Link	IL (m)	Dia (mm)
W03	388251.697	396874.379	64.470	1.620	600		0	6.000	62.850	300
TANK	388244.104	396860.613	64.300	1.716			1	6.000	62.794	300
							0	6.001	62.584	300
W04	388243.401	396859.338	64.380	1.804	600		1	6.001	62.576	300
							0	6.002	62.576	300
W05	388239.060	396855.503	64.490	2.040	1200		1	6.002	62.450	300
							2	4.002	62.525	225
							0	4.003	62.450	150
W06	388238.179	396852.455	64.462	2.132	1200		1	4.003	62.330	150
							0	4.004	62.330	150
EX BS4	388237.159	396848.964	64.375	2.245	1200		1	4.004	62.130	150

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Normal
Rainfall Events	Singular	Skip Steady State	x
FSR Region	England and Wales	Drain Down Time (mins)	240
M5-60 (mm)	18.000	Additional Storage (m³/ha)	20.0
Ratio-R	0.357	Starting Level (m)	
Summer CV	1.000	Check Discharge Rate(s)	x
Winter CV	0.840	Check Discharge Volume	x

Storm Durations

15	60	180	360	600	960
30	120	240	480	720	1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	0	0	0
100	0	0	0
100	40	0	0

Node W05 Online Hydro-Brake® Control

Flap Valve	x
Replaces Downstream Link	x
Invert Level (m)	62.729
Design Depth (m)	1.400
Design Flow (l/s)	5.0
Objective	(HE) Minimise upstream storage
Sump Available	✓
Product Number	CTL-SHE-0100-5000-1400-5000
Min Outlet Diameter (m)	0.150
Min Node Diameter (mm)	1200

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Node TANK Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	62.780
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	49.0	0.0	0.800	49.0	0.0	0.801	0.0	0.0

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