Existing Network Details for Storm

* - Indicates pipe has been modified outside of System 1

	PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section Type
*	1.000	13.400	0.100	134.0	0.010	5.00	0.600	o	225	Pipe/Conduit
*	2.000	10.000	0.100	100.0	0.000	5.00	0.600	o	100	Pipe/Conduit
*	2.001	10.000	1.765	5.7	0.005	0.00	0.600	o	100	Pipe/Conduit
*	1.001	3.500	1.060	3.3	0.004	0.00	0.600	o	225	Pipe/Conduit
*	3.000	10.000	0.100	100.0	0.000	5.00	0.600	o	100	Pipe/Conduit
*	3.001	10.000	1.850	5.4	0.004	0.00	0.600	o	100	Pipe/Conduit
*	4.000	10.000	0.100	100.0	0.000	5.00	0.600	o	100	Pipe/Conduit
*	4.001	10.000	1.850	5.4	0.005	0.00	0.600	o	100	Pipe/Conduit
*	3.002	3.500	1.050	3.3	0.004	0.00	0.600	o	150	Pipe/Conduit
*	1.002	10.000	-2.350	-4.3	0.000	0.00	0.600	o	150	Pipe/Conduit
*	1.003	10.000	0.200	50.0	0.000	0.00	0.600	o	150	Pipe/Conduit

	PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
*	1.000	MH01	32.510	31.610	0.675	31.920	31.510	0.185		600
*	2.000	DUMMY	34.000	33.500	0.400	34.000	33.400	0.500		600
*	2.001	GR1	34.000	33.400	0.500	31.920	31.635	0.185		600
*	1.001	MH02	31.920	31.510	0.185	32.510	30.450	1.835		600
*	3.000	DUMMY	34.000	33.500	0.400	34.000	33.400	0.500		600
*	3.001	GR2	34.000	33.400	0.500	31.920	31.550	0.270		600
*	4.000	DUMMY	34.000	33.500	0.400	34.000	33.400	0.500		600
*	4.001	GR3	34.000	33.400	0.500	31.920	31.550	0.270		600
*	3.002	MH03	31.920	31.500	0.270	32.510	30.450	1.910		600
*	1.002	TANK-PUMP	32.510	30.450	1.910	34.000	32.800	1.050	Pump	600
*	1.003	TW SEWER	34.000	32.800	1.050	34.000	32.600	1.250		1200

Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
MH01	32.510	0.900	Open Manhole	600	1.000	31.610	225				
DUMMY	34.000	0.500	Open Manhole	600	2.000	33.500	100				
GR1	34.000	0.600	Open Manhole	600	2.001	33.400	100	2.000	33.400	100	
MH02	31.920	0.410	Open Manhole	600	1.001	31.510	225	1.000	31.510	225	
								2.001	31.635	100	
DUMMY	34.000	0.500	Open Manhole	600	3.000	33.500	100				
GR2	34.000	0.600	Open Manhole	600	3.001	33.400	100	3.000	33.400	100	
DUMMY	34.000	0.500	Open Manhole	600	4.000	33.500	100				
GR3	34.000	0.600	Open Manhole	600	4.001	33.400	100	4.000	33.400	100	
MH03	31.920	0.420	Open Manhole	600	3.002	31.500	150	3.001	31.550	100	
								4.001	31.550	100	
TANK-PUMP	32.510	2.060	Open Manhole	600	1.002	30.450	150	1.001	30.450	225	
								3.002	30.450	150	
TW SEWER	34.000	1.200	Open Manhole	1200	1.003	32.800	150	1.002	32.800	150	
	34.000	1.400	Open Manhole	0		OUTFALL		1.003	32.600	150	

No coordinates have been specified, layout information cannot be produced.

PIPELINE SCHEDULES for Storm

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	225	MH01	32.510	31.610	0.675	Open Manhole	600
2.000	o	100	DUMMY	34.000	33.500	0.400	Open Manhole	600
2.001	o	100	GR1	34.000	33.400	0.500	Open Manhole	600
1.001	o	225	MH02	31.920	31.510	0.185	Open Manhole	600
3.000	o	100	DUMMY	34.000	33.500	0.400	Open Manhole	600
3.001	o	100	GR2	34.000	33.400	0.500	Open Manhole	600
4.000	o	100	DUMMY	34.000	33.500	0.400	Open Manhole	600
4.001	o	100	GR3	34.000	33.400	0.500	Open Manhole	600
3.002	o	150	MH03	31.920	31.500	0.270	Open Manhole	600
1.002	o	150	TANK-PUMP	32.510	30.450	1.910	Open Manhole	600
1.003	o	150	TW SEWER	34.000	32.800	1.050	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	13.400	134.0	MH02	31.920	31.510	0.185	Open Manhole	600
2.000	10.000	100.0	GR1	34.000	33.400	0.500	Open Manhole	600
2.001	10.000	5.7	MH02	31.920	31.635	0.185	Open Manhole	600
1.001	3.500	3.3	TANK-PUMP	32.510	30.450	1.835	Open Manhole	600
3.000	10.000	100.0	GR2	34.000	33.400	0.500	Open Manhole	600
3.001	10.000	5.4	MH03	31.920	31.550	0.270	Open Manhole	600
4.000	10.000	100.0	GR3	34.000	33.400	0.500	Open Manhole	600
4.001	10.000	5.4	MH03	31.920	31.550	0.270	Open Manhole	600
3.002	3.500	3.3	TANK-PUMP	32.510	30.450	1.910	Open Manhole	600
1.002	10.000	-4.3	TW SEWER	34.000	32.800	1.050	Open Manhole	1200
1.003	10.000	50.0		34.000	32.600	1.250	Open Manhole	0

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)
1.003		34.000	32.600	0.000	0	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 Coeffiecient	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	1
Number of Online Controls	1	Number of Time/Area Diagrams	3
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	5	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.800	Storm Duration (mins)	30
Ratio R	0.445		

Online Controls for Storm

Pump Manhole: TANK-PUMP, DS/PN: 1.002, Volume (m³): 0.7

Invert Level (m) 30.450

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	2.0000	0.900	5.0000	1.700	5.0000	2.500	5.0000
0.200	2.0000	1.000	5.0000	1.800	5.0000	2.600	5.0000
0.300	2.0000	1.100	5.0000	1.900	5.0000	2.700	5.0000
0.400	2.0000	1.200	5.0000	2.000	5.0000	2.800	5.0000
0.500	3.0000	1.300	5.0000	2.100	5.0000	2.900	5.0000
0.600	5.0000	1.400	5.0000	2.200	5.0000	3.000	5.0000
0.700	5.0000	1.500	5.0000	2.300	5.0000		
0.800	5.0000	1.600	5.0000	2.400	5.0000		

Storage Structures for Storm

Cellular Storage Manhole: TANK-PUMP, DS/PN: 1.002

Invert Level (m) 30.450 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	10.3	0.0	1.000	10.3	0.0
0.500	10.3	0.0	1.010	0.0	0.0

Time Area Diagram for Green Roof at Pipe Number 2.001 (Storm)

Area (m³) 50 Evaporation (mm/day) 3
Depression Storage (mm) 5 Decay Coefficient 0.050

Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)
0	4	0.000909	32	36	0.000183	64	68	0.000037	96	100	0.000007
4	8	0.000744	36	40	0.000150	68	72	0.000030	100	104	0.000006
8	12	0.000609	40	44	0.000123	72	76	0.000025	104	108	0.000005
12	16	0.000499	44	48	0.000101	76	80	0.000020	108	112	0.000004
16	20	0.000408	48	52	0.000082	80	84	0.000017	112	116	0.000003
20	24	0.000334	52	56	0.000067	84	88	0.000014	116	120	0.000003
24	28	0.000274	56	60	0.000055	88	92	0.000011			
28	32	0.000224	60	64	0.000045	92	96	0.000009			

Time Area Diagram for Green Roof at Pipe Number 3.001 (Storm)

Area (m³) 40 Evaporation (mm/day) 3
Depression Storage (mm) 5 Decay Coefficient 0.050

Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)
0	4	0.000727	32	36	0.000147	64	68	0.000030	96	100	0.000006
4	8	0.000595	36	40	0.000120	68	72	0.000024	100	104	0.000005
8	12	0.000487	40	44	0.000098	72	76	0.000020	104	108	0.000004
12	16	0.000399	44	48	0.000081	76	80	0.000016	108	112	0.000003
16	20	0.000327	48	52	0.000066	80	84	0.000013	112	116	0.000003
20	24	0.000267	52	56	0.000054	84	88	0.000011	116	120	0.000002
24	28	0.000219	56	60	0.000044	88	92	0.000009			
28	32	0.000179	60	64	0.000036	92	96	0.000007			

Time Area Diagram for Green Roof at Pipe Number 4.001 (Storm)

Area (m³) 50 Evaporation (mm/day) 3
Depression Storage (mm) 5 Decay Coefficient 0.050

Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)
0	4	0.000909	32	36	0.000183	64	68	0.000037	96	100	0.000007
4	8	0.000744	36	40	0.000150	68	72	0.000030	100	104	0.000006
8	12	0.000609	40	44	0.000123	72	76	0.000025	104	108	0.000005
12	16	0.000499	44	48	0.000101	76	80	0.000020	108	112	0.000004
16	20	0.000408	48	52	0.000082	80	84	0.000017	112	116	0.000003
20	24	0.000334	52	56	0.000067	84	88	0.000014	116	120	0.000003
24	28	0.000274	56	60	0.000055	88	92	0.000011			
28	32	0.000224	60	64	0.000045	92	96	0.000009			

100 year Return Period 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 Coeffiecient	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	3
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.445
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	20.800	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)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years)	100
Climate Change (%)	40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
1.000	MH01	15 Winter	100	+40%				
2.000	DUMMY	60 Winter	100	+40%				
2.001	GR1	15 Winter	100	+40%				
1.001	MH02	15 Winter	100	+40%				
3.000	DUMMY	60 Winter	100	+40%				
3.001	GR2	15 Winter	100	+40%				
4.000	DUMMY	60 Winter	100	+40%				
4.001	GR3	15 Winter	100	+40%				
3.002	MH03	15 Winter	100	+40%				
1.002	TANK-PUMP	60 Winter	100	+40%	100/15 Summer			
1.003	TW SEWER	60 Winter	100	+40%				

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	MH01	31.673	-0.162	0.000	0.17		6.7	OK	
2.000	DUMMY	33.500	-0.100	0.000	0.00		0.0	OK	
2.001	GR1	33.414	-0.086	0.000	0.04		1.0	OK	
1.001	MH02	31.548	-0.187	0.000	0.07		9.5	OK	

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
3.000	DUMMY	33.500	-0.100	0.000	0.00		0.0	OK	
3.001	GR2	33.412	-0.088	0.000	0.03		0.8	OK	
4.000	DUMMY	33.500	-0.100	0.000	0.00		0.0	OK	
4.001	GR3	33.414	-0.086	0.000	0.04		1.0	OK	
3.002	MH03	31.526	-0.124	0.000	0.06		3.6	OK	
1.002	TANK-PUMP	31.026	0.426	0.000	0.80		4.5	SURCHARGED	
1.003	TW SEWER	32.845	-0.105	0.000	0.20		4.5	OK	