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York House Edison Park Dorcan Way Swindon SN3 3RB		
Date 06/11/2014 15:28 File 4159-AREA1 NETWORK_06NOV20...	Designed By NParajuli Checked By	
Elstree Computing Ltd	Network W.12.4	

Existing Network Details for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)
1.000	10.000	0.050	200.0	0.349	5.00	0.600	o	150
1.001	10.000	0.050	200.0	0.000	0.00	0.600	o	150
2.000	10.000	0.050	200.0	0.295	5.00	0.600	o	150
2.001	10.000	0.050	200.0	0.000	0.00	0.600	o	150
1.002	65.000	0.250	260.0	0.000	0.00	0.600	\	-1
3.000	5.000	0.025	200.0	0.200	5.00	0.600	o	150
3.001	5.000	0.025	200.0	0.000	0.00	0.600	o	150
1.003	5.000	0.050	100.0	0.000	0.00	0.600	o	150
1.004	5.000	0.050	100.0	0.000	0.00	0.600	o	150

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	1	5.400	4.400	0.850	5.400	4.350	0.900		1050
1.001	2	5.400	4.350	0.900	5.350	4.300	0.900	Orifice	1050
2.000	2	5.400	4.400	0.850	5.400	4.350	0.900		1050
2.001	4	5.400	4.350	0.900	5.350	4.300	0.900	Orifice	1050
1.002	3	5.350	4.100	0.250	5.000	3.850	0.150	Orifice	10000
3.000	6	5.200	3.900	1.150	5.100	3.875	1.075		1200
3.001	7	5.100	3.875	1.075	5.000	3.850	1.000	Orifice	1200
1.003	4	5.000	3.850	1.000	5.000	3.800	1.050		10000
1.004	7	5.000	3.800	1.050	5.000	3.750	1.100	Hydro-Brake®	1200

Conduit Sections for Storm

NOTE: Diameters less than 66 refer to section numbers of hydraulic conduits. These conduits are marked by the symbols:- [] box culvert, \ open channel, oo dual pipe, ooo triple pipe, O egg.

Section numbers < 0 are taken from user conduit table

Section Number	Conduit Type	Major Dimn. (mm)	Minor Dimn. (mm)	Side Slope (Deg)	Corner Splay (mm)	4*Hyd Radius (m)	XSect Area (m ²)
-1	\	1000	1000	45.0		2.090	2.000

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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)
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1.004		5.000	3.750	0.000	0	0
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Simulation Criteria for Storm

Volumetric Runoff Coeff	0.750	Foul Sewage per hectare (l/s)	0.000
PIMP (% impervious)	100	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m ³ /ha Storage	2.000
Hot Start (mins)	0	Inlet Coefficient	0.800
Hot Start Level (mm)	0	Run Time (mins)	60
Manhole Headloss Coeff (Global)	0.500	Output Interval (mins)	1
Number of Input Hydrographs	0	Number of Storage Structures	4
Number of Online Controls	5	Number of Time/Area Diagrams	0
Number of Offline Controls	0		

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.000	Storm Duration (mins)	30
Ratio R	0.350		

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Online Controls for Storm

Orifice Manhole: 2, DS/PN: 1.001, Volume (m³): 1.1

Diameter (m) 0.070 Discharge Coefficient 0.600 Invert Level (m) 4.350

Orifice Manhole: 4, DS/PN: 2.001, Volume (m³): 1.1

Diameter (m) 0.030 Discharge Coefficient 0.600 Invert Level (m) 4.350

Orifice Manhole: 3, DS/PN: 1.002, Volume (m³): 98.3

Diameter (m) 0.030 Discharge Coefficient 0.600 Invert Level (m) 4.100

Orifice Manhole: 7, DS/PN: 3.001, Volume (m³): 1.5

Diameter (m) 0.030 Discharge Coefficient 0.600 Invert Level (m) 3.875

Hydro-Brake® Manhole: 7, DS/PN: 1.004, Volume (m³): 1.3

Design Head (m) 0.750 Hydro-Brake® Type Md4 Invert Level (m) 3.800
Design Flow (l/s) 1.0 Diameter (mm) 39

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	0.6	1.200	1.3	3.000	2.1	7.000	3.1
0.200	0.5	1.400	1.4	3.500	2.2	7.500	3.2
0.300	0.6	1.600	1.5	4.000	2.4	8.000	3.4
0.400	0.7	1.800	1.6	4.500	2.5	8.500	3.5
0.500	0.8	2.000	1.7	5.000	2.7	9.000	3.6
0.600	0.9	2.200	1.8	5.500	2.8	9.500	3.7
0.800	1.1	2.400	1.8	6.000	2.9		
1.000	1.2	2.600	1.9	6.500	3.0		

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Storage Structures for Storm

Porous Car Park Manhole: 1, DS/PN: 1.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	23.5
Membrane Percolation (mm/hr)	1000	Length (m)	23.5
Max Percolation (l/s)	153.4	Slope (1:X)	10000.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	4.330	Cap Volume Depth (m)	0.000

Porous Car Park Manhole: 2, DS/PN: 2.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	30.0
Membrane Percolation (mm/hr)	1000	Length (m)	30.0
Max Percolation (l/s)	250.0	Slope (1:X)	10000.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	4.460	Cap Volume Depth (m)	0.000

Tank or Pond Manhole: 3, DS/PN: 1.002

Invert Level (m) 4.100

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	300.0	0.700	555.0

Porous Car Park Manhole: 6, DS/PN: 3.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	21.5
Membrane Percolation (mm/hr)	1000	Length (m)	21.5
Max Percolation (l/s)	128.4	Slope (1:X)	10000.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	3.900	Cap Volume Depth (m)	0.000

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

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 (%) 30

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	240 Winter	100	+30%	100/15 Summer				
1.001	240 Winter	100	+30%	100/15 Summer				
2.000	960 Winter	100	+30%	100/15 Summer				
2.001	1440 Winter	100	+30%	100/15 Summer				
1.002	1440 Winter	100	+30%					
3.000	1440 Winter	100	+30%	100/15 Summer				
3.001	960 Winter	100	+30%	100/15 Summer				
1.003	1440 Winter	100	+30%	100/120 Summer				
1.004	1440 Winter	100	+30%	100/120 Summer				

PN	US/MH Name	Water		Flooded		Pipe		Status
		Level (m)	Surch'd Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
1.000	1	5.171	0.621	0.000	0.80	0.0	8.9	FLOOD RISK
1.001	2	5.139	0.639	0.000	0.80	0.0	8.9	FLOOD RISK
2.000	2	5.144	0.594	0.000	0.14	0.0	1.6	FLOOD RISK
2.001	4	5.206	0.706	0.000	0.13	0.0	1.4	FLOOD RISK
1.002	3	4.712	-0.388	0.000	0.00	0.0	1.1	OK
3.000	6	4.736	0.686	0.000	0.14	0.0	1.4	SURCHARGED
3.001	7	4.793	0.768	0.000	0.14	0.0	1.4	SURCHARGED
1.003	4	4.514	0.514	0.000	0.08	0.0	1.1	SURCHARGED
1.004	7	4.575	0.625	0.000	0.07	0.0	1.0	SURCHARGED