



Project					
COSTA COFFEE, RUABON					
Made By	Date	Checked By	Date	Rev	Contract No./Sheet number
SH	Nov-18				8951 1
<u>INTRODUCTION</u> The proposed Costa store will require surface water drainage which should, under the hierarchical approach of the Building Regulations, be connected to the sewer network. Soakaway testing has been carried out by Earth Environmental & Geotechnical Limited to prove the infiltration rates across the site and these have been used to design the soakaway tank to the store. The soakaway tank will be serving the customer parking area, drive-thru area and the store roof. Furthermore, the soakaway will have a catch pit manhole immediately upstream and an oil separator to prevent any oils entering the ground.					

S W F Consulting Ltd		Page 1
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)	2	PIMP (%)	100
M5-60 (mm)	18.000	Add Flow / Climate Change (%)	0
Ratio R	0.309	Minimum Backdrop Height (m)	0.350
Maximum Rainfall (mm/hr)	250	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.000
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)	300

Designed with Level Soffits

Network Design Table for Storm

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	30.000	0.175	171.4	0.042	3.00	0.0	0.600	o	150	Pipe/Conduit	
1.001	17.000	0.058	295.6	0.132	0.00	0.0	0.600	o	225	Pipe/Conduit	
2.000	21.000	0.120	175.0	0.065	3.00	0.0	0.600	o	150	Pipe/Conduit	
3.000	16.000	0.091	175.8	0.082	3.00	0.0	0.600	o	225	Pipe/Conduit	
3.001	7.000	0.024	296.9	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.002	8.500	0.028	303.6	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
1.003	2.000	0.007	285.7	0.000	0.00	0.0	0.600	o	300	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	61.94	3.65	113.525	0.042	0.0	0.0	0.0	0.76	13.5	7.0
1.001	59.92	4.03	113.275	0.174	0.0	0.0	0.0	0.76	30.0	28.2
2.000	63.03	3.46	113.280	0.065	0.0	0.0	0.0	0.76	13.4	11.1
3.000	64.18	3.27	112.625	0.082	0.0	0.0	0.0	0.98	39.1	14.3
3.001	63.25	3.43	112.534	0.082	0.0	0.0	0.0	0.75	30.0	14.3
1.002	59.11	4.19	112.435	0.321	0.0	0.0	0.0	0.90	63.4	51.4
1.003	58.93	4.22	112.407	0.321	0.0	0.0	0.0	0.93	65.4	51.4

S W F Consulting Ltd		Page 2
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36 File 8951- Costa Coffee Ruabon.mdx	Designed by SH Checked by PSS	
XP Solutions	Network 2018.1.1	

Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
SWMH A	114.675	1.150	Open Manhole	1350	1.000	113.525	150				
SWMH B	114.500	1.225	Open Manhole	1350	1.001	113.275	225	1.000	113.350	150	
SWMH C	114.410	1.130	Open Manhole	1050	2.000	113.280	150				
SWMH G	113.850	1.225	Open Manhole	1350	3.000	112.625	225				
SWMH F	114.000	1.466	Open Manhole	1350	3.001	112.534	225	3.000	112.534	225	
SWMH D	114.170	1.735	Open Manhole	1500	1.002	112.435	300	1.001	113.217	225	707
								2.000	113.160	150	575
								3.001	112.510	225	
SWMH E	114.130	1.723	Open Manhole	1200	1.003	112.407	300	1.002	112.407	300	
	114.200	1.800	Open Manhole	0		OUTFALL		1.003	112.400	300	

S W F Consulting Ltd		Page 3
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

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	150	SWMH A	114.675	113.525	1.000	Open Manhole	1350
1.001	o	225	SWMH B	114.500	113.275	1.000	Open Manhole	1350
2.000	o	150	SWMH C	114.410	113.280	0.980	Open Manhole	1050
3.000	o	225	SWMH G	113.850	112.625	1.000	Open Manhole	1350
3.001	o	225	SWMH F	114.000	112.534	1.241	Open Manhole	1350
1.002	o	300	SWMH D	114.170	112.435	1.435	Open Manhole	1500
1.003	o	300	SWMH E	114.130	112.407	1.423	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	30.000	171.4	SWMH B	114.500	113.350	1.000	Open Manhole	1350
1.001	17.000	295.6	SWMH D	114.170	113.217	0.728	Open Manhole	1500
2.000	21.000	175.0	SWMH D	114.170	113.160	0.860	Open Manhole	1500
3.000	16.000	175.8	SWMH F	114.000	112.534	1.241	Open Manhole	1350
3.001	7.000	296.9	SWMH D	114.170	112.510	1.435	Open Manhole	1500
1.002	8.500	303.6	SWMH E	114.130	112.407	1.423	Open Manhole	1200
1.003	2.000	285.7		114.200	112.400	1.500	Open Manhole	0

S W F Consulting Ltd		Page 4
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 15 minute 1 year Summer I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	16	113.596	-0.079	0.000	0.43	5.5	OK
1.001	SWMH B	22	113.408	-0.092	0.000	0.65	17.3	OK
2.000	SWMH C	16	113.376	-0.054	0.000	0.70	8.9	OK
3.000	SWMH G	16	112.715	-0.135	0.000	0.32	10.9	OK
3.001	SWMH F	19	112.650	-0.109	0.000	0.45	10.6	OK
1.002	SWMH D	19	112.632	-0.103	0.000	0.75	35.7	OK
1.003	SWMH E	19	112.588	-0.119	0.000	0.67	36.3	OK

S W F Consulting Ltd		Page 5
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 30 minute 1 year Summer I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	21	113.589	-0.086	0.000	0.36	4.7	OK
1.001	SWMH B	25	113.402	-0.098	0.000	0.60	16.1	OK
2.000	SWMH C	21	113.364	-0.066	0.000	0.59	7.5	OK
3.000	SWMH G	21	112.705	-0.145	0.000	0.27	9.5	OK
3.001	SWMH F	22	112.637	-0.122	0.000	0.39	9.2	OK
1.002	SWMH D	23	112.617	-0.118	0.000	0.68	32.5	OK
1.003	SWMH E	23	112.575	-0.132	0.000	0.59	32.1	OK

S W F Consulting Ltd		Page 6
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 60 minute 1 year Summer I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	28	113.578	-0.097	0.000	0.26	3.4	OK
1.001	SWMH B	30	113.386	-0.114	0.000	0.49	13.0	OK
2.000	SWMH C	28	113.349	-0.081	0.000	0.42	5.3	OK
3.000	SWMH G	28	112.693	-0.157	0.000	0.19	6.7	OK
3.001	SWMH F	28	112.617	-0.142	0.000	0.28	6.5	OK
1.002	SWMH D	29	112.591	-0.145	0.000	0.52	24.7	OK
1.003	SWMH E	29	112.551	-0.157	0.000	0.46	24.9	OK

S W F Consulting Ltd		Page 7
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 120 minute 1 year Summer I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	38	113.567	-0.108	0.000	0.18	2.3	OK
1.001	SWMH B	38	113.367	-0.133	0.000	0.35	9.4	OK
2.000	SWMH C	38	113.334	-0.096	0.000	0.28	3.5	OK
3.000	SWMH G	38	112.678	-0.172	0.000	0.13	4.5	OK
3.001	SWMH F	38	112.600	-0.159	0.000	0.19	4.5	OK
1.002	SWMH D	38	112.561	-0.175	0.000	0.36	17.4	OK
1.003	SWMH E	38	112.524	-0.183	0.000	0.32	17.3	OK

S W F Consulting Ltd		Page 8
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 180 minute 1 year Summer I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	43	113.563	-0.112	0.000	0.15	1.9	OK
1.001	SWMH B	43	113.357	-0.143	0.000	0.29	7.7	OK
2.000	SWMH C	43	113.329	-0.101	0.000	0.23	2.9	OK
3.000	SWMH G	43	112.674	-0.176	0.000	0.11	3.7	OK
3.001	SWMH F	43	112.593	-0.166	0.000	0.16	3.7	OK
1.002	SWMH D	43	112.548	-0.188	0.000	0.30	14.2	OK
1.003	SWMH E	43	112.512	-0.195	0.000	0.26	14.1	OK

S W F Consulting Ltd		Page 9
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 240 minute 1 year Summer I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Flow / Cap.	Overflow (l/s)	Pipe	Status
			Level (m)	Depth (m)	Volume (m³)			Flow (l/s)	
1.000	SWMH A	49	113.560	-0.115	0.000	0.12		1.6	OK
1.001	SWMH B	49	113.350	-0.150	0.000	0.24		6.6	OK
2.000	SWMH C	49	113.325	-0.105	0.000	0.19		2.5	OK
3.000	SWMH G	49	112.670	-0.180	0.000	0.09		3.1	OK
3.001	SWMH F	49	112.588	-0.171	0.000	0.13		3.1	OK
1.002	SWMH D	49	112.538	-0.198	0.000	0.25		12.1	OK
1.003	SWMH E	49	112.503	-0.204	0.000	0.22		12.0	OK

S W F Consulting Ltd		Page 10
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 15 minute 30 year Summer I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Flow / Cap.	Overflow (l/s)	Pipe	Status
			Level (m)	Depth (m)	Volume (m³)			Flow (l/s)	
1.000	SWMH A	6	113.765	0.090	0.000	0.86	11.1	SURCHARGED	
1.001	SWMH B	7	113.627	0.127	0.000	1.80	48.2	SURCHARGED	
2.000	SWMH C	6	113.596	0.166	0.000	1.54	19.5	SURCHARGED	
3.000	SWMH G	7	112.985	0.135	0.000	0.60	20.8	SURCHARGED	
3.001	SWMH F	7	112.945	0.186	0.000	0.78	18.4	SURCHARGED	
1.002	SWMH D	7	112.924	0.189	0.000	1.81	86.5	SURCHARGED	
1.003	SWMH E	7	112.803	0.095	0.000	1.60	86.4	SURCHARGED	

S W F Consulting Ltd		Page 11
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36 File 8951- Costa Coffee Ruabon.mdx	Designed by SH Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 30 minute 30 year Summer I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	8	113.704	0.029	0.000	0.80	10.3	SURCHARGED
1.001	SWMH B	8	113.588	0.088	0.000	1.64	44.0	SURCHARGED
2.000	SWMH C	8	113.538	0.108	0.000	1.38	17.4	SURCHARGED
3.000	SWMH G	8	112.942	0.092	0.000	0.53	18.4	SURCHARGED
3.001	SWMH F	8	112.906	0.147	0.000	0.76	17.9	SURCHARGED
1.002	SWMH D	8	112.887	0.152	0.000	1.64	78.3	SURCHARGED
1.003	SWMH E	8	112.786	0.079	0.000	1.46	79.0	SURCHARGED

S W F Consulting Ltd		Page 12
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36 File 8951- Costa Coffee Ruabon.mdx	Designed by SH Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 60 minute 30 year Summer I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	SWMH A	12	113.614	-0.061	0.000	0.63		8.2	OK
1.001	SWMH B	12	113.529	0.029	0.000	1.24		33.2	SURCHARGED
2.000	SWMH C	12	113.423	-0.007	0.000	0.99		12.5	OK
3.000	SWMH G	12	112.804	-0.046	0.000	0.43		14.8	OK
3.001	SWMH F	12	112.774	0.015	0.000	0.63		14.8	SURCHARGED
1.002	SWMH D	12	112.759	0.024	0.000	1.27		60.6	SURCHARGED
1.003	SWMH E	12	112.711	0.004	0.000	1.12		60.9	SURCHARGED

S W F Consulting Ltd		Page 13
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 120 minute 30 year Summer I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	19	113.592	-0.083	0.000	0.42	5.4	OK
1.001	SWMH B	17	113.433	-0.067	0.000	0.84	22.5	OK
2.000	SWMH C	19	113.370	-0.060	0.000	0.67	8.4	OK
3.000	SWMH G	19	112.710	-0.140	0.000	0.31	10.6	OK
3.001	SWMH F	17	112.664	-0.095	0.000	0.45	10.6	OK
1.002	SWMH D	17	112.652	-0.084	0.000	0.87	41.4	OK
1.003	SWMH E	17	112.605	-0.102	0.000	0.77	41.4	OK

S W F Consulting Ltd		Page 14
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 180 minute 30 year Summer I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	22	113.585	-0.090	0.000	0.34	4.4	OK
1.001	SWMH B	19	113.411	-0.089	0.000	0.68	18.1	OK
2.000	SWMH C	22	113.359	-0.071	0.000	0.54	6.8	OK
3.000	SWMH G	22	112.701	-0.149	0.000	0.25	8.6	OK
3.001	SWMH F	21	112.638	-0.121	0.000	0.36	8.6	OK
1.002	SWMH D	21	112.622	-0.114	0.000	0.70	33.3	OK
1.003	SWMH E	21	112.579	-0.129	0.000	0.61	33.2	OK

S W F Consulting Ltd		Page 15
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 240 minute 30 year Summer I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Flow / Cap.	Overflow	Pipe	Status
			Level (m)	Depth (m)	Volume (m³)		(l/s)	Flow (l/s)	
1.000	SWMH A	27	113.579	-0.096	0.000	0.28		3.6	OK
1.001	SWMH B	27	113.395	-0.105	0.000	0.56		14.9	OK
2.000	SWMH C	27	113.350	-0.080	0.000	0.44		5.6	OK
3.000	SWMH G	27	112.693	-0.157	0.000	0.20		7.0	OK
3.001	SWMH F	27	112.620	-0.139	0.000	0.30		7.0	OK
1.002	SWMH D	27	112.599	-0.137	0.000	0.58		27.5	OK
1.003	SWMH E	27	112.559	-0.149	0.000	0.51		27.5	OK

S W F Consulting Ltd		Page 16
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 360 minute 30 year Summer I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	34	113.571	-0.104	0.000	0.21	2.7	OK
1.001	SWMH B	33	113.376	-0.124	0.000	0.42	11.1	OK
2.000	SWMH C	34	113.339	-0.091	0.000	0.33	4.2	OK
3.000	SWMH G	34	112.683	-0.167	0.000	0.15	5.3	OK
3.001	SWMH F	34	112.606	-0.153	0.000	0.22	5.3	OK
1.002	SWMH D	34	112.573	-0.163	0.000	0.43	20.6	OK
1.003	SWMH E	33	112.535	-0.172	0.000	0.38	20.6	OK

S W F Consulting Ltd		Page 17
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36 File 8951- Costa Coffee Ruabon.mdx	Designed by SH Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 15 minute 100 year Summer I+20% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	SWMH A	2	114.116	0.441	0.000	1.18	15.3	SURCHARGED	
1.001	SWMH B	2	113.853	0.353	0.000	2.66	71.2	SURCHARGED	
2.000	SWMH C	1	113.932	0.502	0.000	2.20	27.8	SURCHARGED	
3.000	SWMH G	2	113.303	0.453	0.000	0.89	30.6	SURCHARGED	
3.001	SWMH F	2	113.224	0.465	0.000	1.17	27.6	SURCHARGED	
1.002	SWMH D	2	113.187	0.451	0.000	2.66	126.8	SURCHARGED	
1.003	SWMH E	2	112.937	0.230	0.000	2.33	126.0	SURCHARGED	

S W F Consulting Ltd		Page 18
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36 File 8951- Costa Coffee Ruabon.mdx	Designed by SH Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 30 minute 100 year Summer I+20% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	SWMH A	3	114.022	0.347	0.000	1.14	14.8	SURCHARGED	
1.001	SWMH B	3	113.789	0.289	0.000	2.46	65.9	SURCHARGED	
2.000	SWMH C	3	113.820	0.390	0.000	2.05	25.9	SURCHARGED	
3.000	SWMH G	3	113.240	0.390	0.000	0.82	28.5	SURCHARGED	
3.001	SWMH F	3	113.176	0.417	0.000	1.17	27.4	SURCHARGED	
1.002	SWMH D	3	113.142	0.407	0.000	2.49	119.0	SURCHARGED	
1.003	SWMH E	3	112.913	0.206	0.000	2.21	119.5	SURCHARGED	

S W F Consulting Ltd		Page 19
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 60 minute 100 year Summer I+20% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Flow / Cap.	Overflow (l/s)	Pipe	Status
			Level (m)	Depth (m)	Volume (m³)			Flow (l/s)	
1.000	SWMH A	5	113.812	0.137	0.000	0.93	12.1	SURCHARGED	
1.001	SWMH B	5	113.656	0.156	0.000	1.91	51.1	SURCHARGED	
2.000	SWMH C	5	113.610	0.180	0.000	1.53	19.3	SURCHARGED	
3.000	SWMH G	5	113.039	0.189	0.000	0.66	22.8	SURCHARGED	
3.001	SWMH F	5	112.993	0.234	0.000	0.98	23.0	SURCHARGED	
1.002	SWMH D	5	112.969	0.234	0.000	1.97	94.0	SURCHARGED	
1.003	SWMH E	5	112.826	0.118	0.000	1.74	94.1	SURCHARGED	

S W F Consulting Ltd		Page 20
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 120 minute 100 year Summer I+20% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Flow / Cap.	Overflow (l/s)	Pipe	Status
			Level (m)	Depth (m)	Volume (m³)			Flow (l/s)	
1.000	SWMH A	11	113.614	-0.061	0.000	0.66		8.6	OK
1.001	SWMH B	11	113.532	0.032	0.000	1.32		35.5	SURCHARGED
2.000	SWMH C	11	113.435	0.005	0.000	1.05		13.2	SURCHARGED
3.000	SWMH G	11	112.869	0.019	0.000	0.46		16.0	SURCHARGED
3.001	SWMH F	11	112.838	0.079	0.000	0.66		15.5	SURCHARGED
1.002	SWMH D	11	112.821	0.086	0.000	1.34		63.8	SURCHARGED
1.003	SWMH E	11	112.753	0.046	0.000	1.17		63.4	SURCHARGED

S W F Consulting Ltd		Page 21
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 180 minute 100 year Summer I+20% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Flow / Cap.	Overflow (l/s)	Pipe	Status
			Level (m)	Depth (m)	Volume (m³)			Flow (l/s)	
1.000	SWMH A	13	113.603	-0.072	0.000	0.53		6.9	OK
1.001	SWMH B	14	113.500	0.000	0.000	1.03		27.5	OK
2.000	SWMH C	13	113.386	-0.044	0.000	0.85		10.7	OK
3.000	SWMH G	13	112.774	-0.076	0.000	0.38		13.0	OK
3.001	SWMH F	13	112.749	-0.010	0.000	0.56		13.1	OK
1.002	SWMH D	14	112.735	0.000	0.000	1.05		50.0	OK
1.003	SWMH E	13	112.644	-0.064	0.000	0.93		50.5	OK

S W F Consulting Ltd		Page 22
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 240 minute 100 year Summer I+20% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	17	113.594	-0.081	0.000	0.43	5.6	OK
1.001	SWMH B	16	113.437	-0.063	0.000	0.87	23.3	OK
2.000	SWMH C	17	113.372	-0.058	0.000	0.69	8.7	OK
3.000	SWMH G	17	112.713	-0.137	0.000	0.32	11.0	OK
3.001	SWMH F	16	112.669	-0.090	0.000	0.47	11.0	OK
1.002	SWMH D	16	112.658	-0.078	0.000	0.90	43.0	OK
1.003	SWMH E	16	112.610	-0.097	0.000	0.79	43.0	OK

S W F Consulting Ltd		Page 23
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 360 minute 100 year Summer I+20% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	25	113.583	-0.092	0.000	0.32	4.2	OK
1.001	SWMH B	24	113.407	-0.093	0.000	0.65	17.3	OK
2.000	SWMH C	25	113.356	-0.074	0.000	0.51	6.5	OK
3.000	SWMH G	25	112.699	-0.151	0.000	0.24	8.2	OK
3.001	SWMH F	25	112.633	-0.126	0.000	0.35	8.2	OK
1.002	SWMH D	25	112.615	-0.120	0.000	0.67	32.0	OK
1.003	SWMH E	25	112.573	-0.134	0.000	0.59	32.0	OK

S W F Consulting Ltd		Page 24
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 480 minute 100 year Summer I+20% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	29	113.577	-0.098	0.000	0.26	3.4	OK
1.001	SWMH B	28	113.391	-0.109	0.000	0.52	14.0	OK
2.000	SWMH C	29	113.347	-0.083	0.000	0.42	5.2	OK
3.000	SWMH G	29	112.691	-0.159	0.000	0.19	6.6	OK
3.001	SWMH F	29	112.616	-0.143	0.000	0.28	6.6	OK
1.002	SWMH D	28	112.593	-0.142	0.000	0.54	25.9	OK
1.003	SWMH E	28	112.554	-0.154	0.000	0.48	25.9	OK

S W F Consulting Ltd		Page 25
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 600 minute 100 year Summer I+20% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	32	113.573	-0.102	0.000	0.22	2.9	OK
1.001	SWMH B	32	113.380	-0.120	0.000	0.44	11.9	OK
2.000	SWMH C	32	113.341	-0.089	0.000	0.35	4.4	OK
3.000	SWMH G	32	112.685	-0.165	0.000	0.16	5.6	OK
3.001	SWMH F	32	112.608	-0.151	0.000	0.24	5.6	OK
1.002	SWMH D	32	112.578	-0.157	0.000	0.46	22.0	OK
1.003	SWMH E	32	112.540	-0.167	0.000	0.41	22.0	OK

S W F Consulting Ltd		Page 26
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 720 minute 100 year Summer I+20% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	37	113.570	-0.105	0.000	0.19	2.5	OK
1.001	SWMH B	37	113.372	-0.128	0.000	0.39	10.4	OK
2.000	SWMH C	37	113.337	-0.093	0.000	0.31	3.9	OK
3.000	SWMH G	37	112.681	-0.169	0.000	0.14	4.9	OK
3.001	SWMH F	37	112.603	-0.156	0.000	0.21	4.9	OK
1.002	SWMH D	37	112.567	-0.168	0.000	0.40	19.2	OK
1.003	SWMH E	37	112.531	-0.177	0.000	0.35	19.2	OK

S W F Consulting Ltd		Page 27
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36 File 8951- Costa Coffee Ruabon.mdx	Designed by SH Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 15 minute 1 year Winter I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

			Water	Surcharged	Flooded		Pipe	
	US/MH	Storm	Level	Depth	Volume	Flow /	Overflow	Pipe
PN	Name	Rank	(m)	(m)	(m³)	Cap.	(l/s)	(l/s) Status
1.000	SWMH A	18	113.594	-0.081	0.000	0.41	5.3	OK
1.001	SWMH B	20	113.411	-0.089	0.000	0.67	17.9	OK
2.000	SWMH C	18	113.371	-0.059	0.000	0.67	8.4	OK
3.000	SWMH G	18	112.712	-0.138	0.000	0.30	10.5	OK
3.001	SWMH F	20	112.648	-0.111	0.000	0.43	10.1	OK
1.002	SWMH D	20	112.631	-0.104	0.000	0.75	35.7	OK
1.003	SWMH E	20	112.587	-0.121	0.000	0.66	35.9	OK

S W F Consulting Ltd		Page 28
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 30 minute 1 year Winter I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	26	113.582	-0.093	0.000	0.31	4.0	OK
1.001	SWMH B	26	113.397	-0.103	0.000	0.57	15.2	OK
2.000	SWMH C	26	113.355	-0.075	0.000	0.50	6.3	OK
3.000	SWMH G	26	112.698	-0.152	0.000	0.23	7.9	OK
3.001	SWMH F	26	112.625	-0.134	0.000	0.33	7.8	OK
1.002	SWMH D	26	112.604	-0.131	0.000	0.60	28.8	OK
1.003	SWMH E	26	112.564	-0.144	0.000	0.53	28.9	OK

S W F Consulting Ltd		Page 29
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 60 minute 1 year Winter I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	33	113.572	-0.103	0.000	0.21	2.7	OK
1.001	SWMH B	35	113.375	-0.125	0.000	0.41	11.0	OK
2.000	SWMH C	33	113.340	-0.090	0.000	0.33	4.2	OK
3.000	SWMH G	33	112.684	-0.166	0.000	0.15	5.3	OK
3.001	SWMH F	33	112.607	-0.152	0.000	0.23	5.3	OK
1.002	SWMH D	33	112.573	-0.163	0.000	0.43	20.5	OK
1.003	SWMH E	34	112.535	-0.172	0.000	0.38	20.6	OK

S W F Consulting Ltd		Page 30
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 120 minute 1 year Winter I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	46	113.562	-0.113	0.000	0.14	1.8	OK
1.001	SWMH B	46	113.356	-0.144	0.000	0.28	7.4	OK
2.000	SWMH C	46	113.328	-0.102	0.000	0.22	2.8	OK
3.000	SWMH G	46	112.673	-0.177	0.000	0.10	3.5	OK
3.001	SWMH F	46	112.592	-0.167	0.000	0.15	3.5	OK
1.002	SWMH D	46	112.545	-0.191	0.000	0.29	13.7	OK
1.003	SWMH E	46	112.510	-0.198	0.000	0.25	13.7	OK

S W F Consulting Ltd		Page 31
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 180 minute 1 year Winter I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	52	113.558	-0.117	0.000	0.11	1.4	OK
1.001	SWMH B	52	113.346	-0.154	0.000	0.22	5.8	OK
2.000	SWMH C	52	113.322	-0.108	0.000	0.17	2.2	OK
3.000	SWMH G	52	112.667	-0.183	0.000	0.08	2.8	OK
3.001	SWMH F	52	112.585	-0.174	0.000	0.12	2.8	OK
1.002	SWMH D	52	112.532	-0.204	0.000	0.23	10.8	OK
1.003	SWMH E	52	112.498	-0.210	0.000	0.20	10.8	OK

S W F Consulting Ltd		Page 32
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 240 minute 1 year Winter I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	57	113.555	-0.120	0.000	0.09	1.2	OK
1.001	SWMH B	57	113.340	-0.160	0.000	0.18	4.9	OK
2.000	SWMH C	57	113.318	-0.112	0.000	0.15	1.8	OK
3.000	SWMH G	57	112.663	-0.187	0.000	0.07	2.3	OK
3.001	SWMH F	57	112.581	-0.178	0.000	0.10	2.3	OK
1.002	SWMH D	57	112.523	-0.212	0.000	0.19	9.0	OK
1.003	SWMH E	57	112.489	-0.218	0.000	0.17	9.0	OK

S W F Consulting Ltd		Page 33
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36 File 8951- Costa Coffee Ruabon.mdx	Designed by SH Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 15 minute 30 year Winter I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Flow / Cap.	Overflow (l/s)	Pipe	Status
			Level (m)	Depth (m)	Volume (m³)			Flow (l/s)	
1.000	SWMH A	7	113.762	0.087	0.000	0.86		11.1	SURCHARGED
1.001	SWMH B	6	113.627	0.127	0.000	1.81		48.4	SURCHARGED
2.000	SWMH C	7	113.581	0.151	0.000	1.50		19.0	SURCHARGED
3.000	SWMH G	6	112.989	0.139	0.000	0.59		20.3	SURCHARGED
3.001	SWMH F	6	112.948	0.189	0.000	0.84		19.8	SURCHARGED
1.002	SWMH D	6	112.927	0.192	0.000	1.83		87.4	SURCHARGED
1.003	SWMH E	6	112.805	0.097	0.000	1.61		87.2	SURCHARGED

S W F Consulting Ltd		Page 34
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 30 minute 30 year Winter I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	SWMH A	10	113.650	-0.025	0.000	0.72		9.4	OK
1.001	SWMH B	10	113.557	0.057	0.000	1.47		39.5	SURCHARGED
2.000	SWMH C	10	113.476	0.046	0.000	1.19		15.1	SURCHARGED
3.000	SWMH G	10	112.899	0.049	0.000	0.49		17.0	SURCHARGED
3.001	SWMH F	10	112.866	0.107	0.000	0.73		17.2	SURCHARGED
1.002	SWMH D	10	112.848	0.113	0.000	1.49		71.2	SURCHARGED
1.003	SWMH E	10	112.767	0.059	0.000	1.32		71.3	SURCHARGED

S W F Consulting Ltd		Page 35
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 60 minute 30 year Winter I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	15	113.602	-0.073	0.000	0.51	6.6	OK
1.001	SWMH B	15	113.472	-0.028	0.000	1.00	26.8	OK
2.000	SWMH C	15	113.384	-0.046	0.000	0.82	10.3	OK
3.000	SWMH G	15	112.763	-0.087	0.000	0.36	12.5	OK
3.001	SWMH F	15	112.740	-0.019	0.000	0.58	13.7	OK
1.002	SWMH D	15	112.729	-0.007	0.000	1.00	47.7	OK
1.003	SWMH E	15	112.626	-0.081	0.000	0.88	47.7	OK

S W F Consulting Ltd		Page 36
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 120 minute 30 year Winter I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	23	113.584	-0.091	0.000	0.33	4.3	OK
1.001	SWMH B	21	113.409	-0.091	0.000	0.66	17.7	OK
2.000	SWMH C	23	113.357	-0.073	0.000	0.52	6.6	OK
3.000	SWMH G	23	112.699	-0.151	0.000	0.24	8.3	OK
3.001	SWMH F	23	112.635	-0.124	0.000	0.35	8.3	OK
1.002	SWMH D	22	112.618	-0.118	0.000	0.68	32.6	OK
1.003	SWMH E	22	112.575	-0.132	0.000	0.60	32.6	OK

S W F Consulting Ltd		Page 37
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 180 minute 30 year Winter I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
							Flow (l/s)	
1.000	SWMH A	30	113.576	-0.099	0.000	0.25	3.3	OK
1.001	SWMH B	29	113.388	-0.112	0.000	0.51	13.6	OK
2.000	SWMH C	30	113.346	-0.084	0.000	0.40	5.1	OK
3.000	SWMH G	30	112.690	-0.160	0.000	0.18	6.4	OK
3.001	SWMH F	30	112.614	-0.145	0.000	0.27	6.4	OK
1.002	SWMH D	30	112.590	-0.146	0.000	0.52	25.0	OK
1.003	SWMH E	30	112.550	-0.157	0.000	0.46	25.0	OK

S W F Consulting Ltd		Page 38
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 240 minute 30 year Winter I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	35	113.571	-0.104	0.000	0.21	2.7	OK
1.001	SWMH B	34	113.376	-0.124	0.000	0.41	11.1	OK
2.000	SWMH C	35	113.339	-0.091	0.000	0.33	4.1	OK
3.000	SWMH G	35	112.683	-0.167	0.000	0.15	5.2	OK
3.001	SWMH F	35	112.606	-0.153	0.000	0.22	5.2	OK
1.002	SWMH D	35	112.572	-0.163	0.000	0.43	20.4	OK
1.003	SWMH E	35	112.535	-0.173	0.000	0.38	20.4	OK

S W F Consulting Ltd		Page 39
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 360 minute 30 year Winter I+0% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	42	113.564	-0.111	0.000	0.15	2.0	OK
1.001	SWMH B	42	113.361	-0.139	0.000	0.31	8.3	OK
2.000	SWMH C	42	113.330	-0.100	0.000	0.25	3.1	OK
3.000	SWMH G	42	112.675	-0.175	0.000	0.11	3.9	OK
3.001	SWMH F	42	112.595	-0.164	0.000	0.17	3.9	OK
1.002	SWMH D	42	112.552	-0.184	0.000	0.32	15.3	OK
1.003	SWMH E	42	112.516	-0.192	0.000	0.28	15.3	OK

S W F Consulting Ltd		Page 40
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36 File 8951- Costa Coffee Ruabon.mdx	Designed by SH Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 15 minute 100 year Winter I+20% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	SWMH A	1	114.121	0.446	0.000	1.23	15.9	SURCHARGED	
1.001	SWMH B	1	113.859	0.359	0.000	2.69	71.9	SURCHARGED	
2.000	SWMH C	2	113.913	0.483	0.000	2.20	27.8	SURCHARGED	
3.000	SWMH G	1	113.315	0.465	0.000	0.89	31.0	SURCHARGED	
3.001	SWMH F	1	113.245	0.486	0.000	1.24	29.2	SURCHARGED	
1.002	SWMH D	1	113.208	0.472	0.000	2.69	128.3	SURCHARGED	
1.003	SWMH E	1	112.949	0.241	0.000	2.35	127.3	SURCHARGED	

S W F Consulting Ltd		Page 41
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36 File 8951- Costa Coffee Ruabon.mdx	Designed by SH Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 30 minute 100 year Winter I+20% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	SWMH A	4	113.927	0.252	0.000	1.07	13.9	SURCHARGED	
1.001	SWMH B	4	113.723	0.223	0.000	2.23	59.7	SURCHARGED	
2.000	SWMH C	4	113.705	0.275	0.000	1.82	23.0	SURCHARGED	
3.000	SWMH G	4	113.156	0.306	0.000	0.78	27.0	SURCHARGED	
3.001	SWMH F	4	113.098	0.339	0.000	1.13	26.6	SURCHARGED	
1.002	SWMH D	4	113.067	0.332	0.000	2.29	109.4	SURCHARGED	
1.003	SWMH E	4	112.876	0.168	0.000	2.02	109.5	SURCHARGED	

S W F Consulting Ltd		Page 42
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 60 minute 100 year Winter I+20% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Flow / Cap.	Overflow (l/s)	Pipe	Status
			Level (m)	Depth (m)	Volume (m³)			Flow (l/s)	
1.000	SWMH A	9	113.690	0.015	0.000	0.79	10.2	SURCHARGED	
1.001	SWMH B	9	113.580	0.080	0.000	1.59	42.6	SURCHARGED	
2.000	SWMH C	9	113.502	0.072	0.000	1.27	16.0	SURCHARGED	
3.000	SWMH G	9	112.940	0.090	0.000	0.57	19.7	SURCHARGED	
3.001	SWMH F	9	112.902	0.143	0.000	0.84	19.8	SURCHARGED	
1.002	SWMH D	9	112.882	0.147	0.000	1.65	78.5	SURCHARGED	
1.003	SWMH E	9	112.783	0.076	0.000	1.45	78.5	SURCHARGED	

S W F Consulting Ltd		Page 43
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 120 minute 100 year Winter I+20% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	14	113.602	-0.073	0.000	0.52	6.7	OK
1.001	SWMH B	13	113.500	0.000	0.000	1.02	27.4	OK
2.000	SWMH C	14	113.384	-0.046	0.000	0.83	10.4	OK
3.000	SWMH G	14	112.773	-0.077	0.000	0.38	13.0	OK
3.001	SWMH F	14	112.748	-0.011	0.000	0.56	13.1	OK
1.002	SWMH D	13	112.735	0.000	0.000	1.06	50.7	OK
1.003	SWMH E	14	112.638	-0.069	0.000	0.93	50.4	OK

S W F Consulting Ltd		Page 44
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36 File 8951- Costa Coffee Ruabon.mdx	Designed by SH Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 180 minute 100 year Winter I+20% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	20	113.591	-0.084	0.000	0.40	5.2	OK
1.001	SWMH B	18	113.427	-0.073	0.000	0.80	21.3	OK
2.000	SWMH C	20	113.367	-0.063	0.000	0.63	8.0	OK
3.000	SWMH G	20	112.707	-0.143	0.000	0.29	10.1	OK
3.001	SWMH F	18	112.657	-0.102	0.000	0.43	10.1	OK
1.002	SWMH D	18	112.644	-0.091	0.000	0.82	39.3	OK
1.003	SWMH E	18	112.598	-0.110	0.000	0.73	39.3	OK

S W F Consulting Ltd		Page 45
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 240 minute 100 year Winter I+20% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	24	113.583	-0.092	0.000	0.32	4.2	OK
1.001	SWMH B	23	113.407	-0.093	0.000	0.65	17.4	OK
2.000	SWMH C	24	113.356	-0.074	0.000	0.51	6.5	OK
3.000	SWMH G	24	112.699	-0.151	0.000	0.24	8.2	OK
3.001	SWMH F	24	112.633	-0.126	0.000	0.35	8.2	OK
1.002	SWMH D	24	112.616	-0.120	0.000	0.67	32.0	OK
1.003	SWMH E	24	112.574	-0.134	0.000	0.59	32.0	OK

S W F Consulting Ltd		Page 46
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 360 minute 100 year Winter I+20% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
							Flow (l/s)	
1.000	SWMH A	31	113.575	-0.100	0.000	0.24	3.1	OK
1.001	SWMH B	31	113.385	-0.115	0.000	0.48	12.9	OK
2.000	SWMH C	31	113.344	-0.086	0.000	0.38	4.8	OK
3.000	SWMH G	31	112.688	-0.162	0.000	0.18	6.1	OK
3.001	SWMH F	31	112.612	-0.147	0.000	0.26	6.1	OK
1.002	SWMH D	31	112.585	-0.150	0.000	0.50	23.8	OK
1.003	SWMH E	31	112.546	-0.161	0.000	0.44	23.8	OK

S W F Consulting Ltd		Page 47
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 480 minute 100 year Winter I+20% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	36	113.570	-0.105	0.000	0.19	2.5	OK
1.001	SWMH B	36	113.372	-0.128	0.000	0.39	10.5	OK
2.000	SWMH C	36	113.337	-0.093	0.000	0.31	3.9	OK
3.000	SWMH G	36	112.681	-0.169	0.000	0.14	4.9	OK
3.001	SWMH F	36	112.604	-0.155	0.000	0.21	4.9	OK
1.002	SWMH D	36	112.568	-0.168	0.000	0.40	19.3	OK
1.003	SWMH E	36	112.531	-0.177	0.000	0.36	19.3	OK

S W F Consulting Ltd		Page 48
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36	Designed by SH	
File 8951- Costa Coffee Ruabon.mdx	Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 600 minute 100 year Winter I+20% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Flow / Cap.	Overflow (l/s)	Pipe	Status
			Level (m)	Depth (m)	Volume (m³)			Flow (l/s)	
1.000	SWMH A	40	113.566	-0.109	0.000	0.17		2.1	OK
1.001	SWMH B	40	113.364	-0.136	0.000	0.33		8.9	OK
2.000	SWMH C	40	113.332	-0.098	0.000	0.26		3.3	OK
3.000	SWMH G	40	112.677	-0.173	0.000	0.12		4.2	OK
3.001	SWMH F	40	112.598	-0.161	0.000	0.18		4.2	OK
1.002	SWMH D	40	112.556	-0.179	0.000	0.34		16.4	OK
1.003	SWMH E	40	112.520	-0.188	0.000	0.30		16.4	OK

S W F Consulting Ltd		Page 49
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:36 File 8951- Costa Coffee Ruabon.mdx	Designed by SH Checked by PSS	
XP Solutions	Network 2018.1.1	

Summary Wizard of 720 minute 100 year Winter I+20% 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 3.000
 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 Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.309 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, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 20

PN	US/MH Name	Storm Rank	Water	Surcharged	Flooded	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	
1.000	SWMH A	44	113.563	-0.112	0.000	0.14	1.9	OK
1.001	SWMH B	44	113.357	-0.143	0.000	0.29	7.7	OK
2.000	SWMH C	44	113.328	-0.102	0.000	0.23	2.9	OK
3.000	SWMH G	44	112.674	-0.176	0.000	0.11	3.7	OK
3.001	SWMH F	44	112.593	-0.166	0.000	0.16	3.7	OK
1.002	SWMH D	44	112.547	-0.188	0.000	0.30	14.3	OK
1.003	SWMH E	45	112.512	-0.196	0.000	0.26	14.3	OK

S W F Consulting Ltd		Page 50
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	SOAKAWAY - COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:46 File 8951 - Soakaway Design.srcx	Designed by SH Checked by PSS	
XP Solutions	Source Control 2018.1.1	

Summary of Results for 100 year Return Period (+20%)

Half Drain Time : 1150 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	112.272	0.262	0.8	37.3	O K
30 min Summer	112.367	0.357	0.8	50.8	O K
60 min Summer	112.473	0.463	0.9	65.9	O K
120 min Summer	112.584	0.574	0.9	81.8	O K
180 min Summer	112.646	0.636	0.9	90.6	O K
240 min Summer	112.684	0.674	0.9	96.0	O K
360 min Summer	112.730	0.720	0.9	102.6	O K
480 min Summer	112.756	0.746	0.9	106.4	O K
600 min Summer	112.771	0.761	0.9	108.4	O K
720 min Summer	112.777	0.767	1.0	109.3	O K
960 min Summer	112.775	0.765	1.0	109.1	O K
1440 min Summer	112.760	0.750	0.9	106.9	O K
2160 min Summer	112.728	0.718	0.9	102.4	O K
2880 min Summer	112.695	0.685	0.9	97.6	O K
4320 min Summer	112.627	0.617	0.9	88.0	O K
5760 min Summer	112.562	0.552	0.9	78.6	O K
7200 min Summer	112.501	0.491	0.9	70.0	O K
8640 min Summer	112.445	0.435	0.9	62.0	O K
10080 min Summer	112.393	0.383	0.9	54.6	O K
15 min Winter	112.303	0.293	0.8	41.8	O K
30 min Winter	112.411	0.401	0.9	57.1	O K
60 min Winter	112.530	0.520	0.9	74.1	O K
120 min Winter	112.657	0.647	0.9	92.2	O K
180 min Winter	112.729	0.719	0.9	102.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	96.372	0.0	19
30 min Summer	66.213	0.0	34
60 min Summer	43.553	0.0	64
120 min Summer	27.688	0.0	124
180 min Summer	20.914	0.0	182
240 min Summer	17.001	0.0	242
360 min Summer	12.636	0.0	362
480 min Summer	10.234	0.0	482
600 min Summer	8.682	0.0	600
720 min Summer	7.585	0.0	720
960 min Summer	6.123	0.0	894
1440 min Summer	4.517	0.0	1136
2160 min Summer	3.323	0.0	1516
2880 min Summer	2.669	0.0	1932
4320 min Summer	1.955	0.0	2764
5760 min Summer	1.566	0.0	3576
7200 min Summer	1.320	0.0	4328
8640 min Summer	1.148	0.0	5104
10080 min Summer	1.021	0.0	5856
15 min Winter	96.372	0.0	19
30 min Winter	66.213	0.0	33
60 min Winter	43.553	0.0	62
120 min Winter	27.688	0.0	122
180 min Winter	20.914	0.0	180

S W F Consulting Ltd		Page 51
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	SOAKAWAY - COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:46 File 8951 - Soakaway Design.srcx	Designed by SH Checked by PSS	
XP Solutions	Source Control 2018.1.1	

Summary of Results for 100 year Return Period (+20%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
240 min Winter	112.774	0.764	1.0	108.8	O K
360 min Winter	112.830	0.820	1.0	116.9	O K
480 min Winter	112.865	0.855	1.0	121.8	O K
600 min Winter	112.886	0.876	1.0	124.8	O K
720 min Winter	112.898	0.888	1.0	126.5	O K
960 min Winter	112.905	0.895	1.0	127.5	O K
1440 min Winter	112.884	0.874	1.0	124.5	O K
2160 min Winter	112.843	0.833	1.0	118.7	O K
2880 min Winter	112.794	0.784	1.0	111.8	O K
4320 min Winter	112.691	0.681	0.9	97.0	O K
5760 min Winter	112.590	0.580	0.9	82.7	O K
7200 min Winter	112.498	0.488	0.9	69.6	O K
8640 min Winter	112.414	0.404	0.9	57.6	O K
10080 min Winter	112.338	0.328	0.8	46.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	17.001	0.0	238
360 min Winter	12.636	0.0	356
480 min Winter	10.234	0.0	470
600 min Winter	8.682	0.0	584
720 min Winter	7.585	0.0	698
960 min Winter	6.123	0.0	916
1440 min Winter	4.517	0.0	1298
2160 min Winter	3.323	0.0	1640
2880 min Winter	2.669	0.0	2104
4320 min Winter	1.955	0.0	2984
5760 min Winter	1.566	0.0	3856
7200 min Winter	1.320	0.0	4680
8640 min Winter	1.148	0.0	5448
10080 min Winter	1.021	0.0	6160

S W F Consulting Ltd		Page 52
Unit 4 Millbank House Riverside Business Park Wilmslow Cheshire SK9 1BJ	SOAKAWAY - COSTA COFFEE PARK ROAD RUABON	
Date 06/11/2018 16:46	Designed by SH	
File 8951 - Soakaway Design.srcx	Checked by PSS	
XP Solutions		Source Control 2018.1.1

Model Details

Storage is Online Cover Level (m) 114.130

Cellular Storage Structure

Invert Level (m) 112.010 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.03636 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.03636

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	150.0	150.0	1.000	150.0	200.0	1.001	0.0	200.0