

Such Salinger Peters Ltd		Page 0
Fourth Floor Dean Park House 8-10 Dean Park Crescent Bournemouth Dorset BH1 1HL	Emsworth Full Network 5.5m x 19m x 1.6m deep	
Date 17/11/2017 16:06 File TRIAL.MDX	Designed by KD Checked by BK	
Micro Drainage	Network 2015.1	

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)	1	Add Flow / Climate Change (%)	40
M5-60 (mm)	19.100	Minimum Backdrop Height (m)	0.200
Ratio R	0.350	Maximum Backdrop Height (m)	1.500
Maximum Rainfall (mm/hr)	550	Min Design Depth for Optimisation (m)	0.450
Maximum Time of Concentration (mins)	15	Min Vel for Auto Design only (m/s)	1.00
Foul Sewage (l/s/ha)	0.000	Min Slope for Optimisation (1:X)	120
Volumetric Runoff Coeff.	0.750		

Designed with Level Soffits

Time Area Diagram for Storm

Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.066	4-8	0.111

Total Area Contributing (ha) = 0.177

Total Pipe Volume (m³) = 8.031

Network Design Table for Storm

« - Indicates pipe capacity < flow

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Auto Design
S1.000	12.639	0.268	47.2	0.010	4.00	0.0	0.600	o	150	
S1.001	12.702	0.126	100.8	0.000	0.00	0.0	0.600	o	150	
S1.002	9.547	0.095	100.5	0.000	0.00	0.0	0.600	o	150	
S1.003	9.834	0.097	101.4	0.005	0.00	0.0	0.600	o	225	
S1.004	21.558	0.180	119.8	0.020	0.00	0.0	0.600	o	225	
S1.005	18.816	0.157	119.8	0.000	0.00	0.0	0.600	o	225	
S2.000	15.679	0.268	58.5	0.020	4.00	0.0	0.600	o	100	
S1.006	4.522	0.038	120.0	0.000	0.00	0.0	0.600	o	225	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	I.Area (ha)	Base Flow (l/s)	Foul Flow (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S1.000	52.71	4.14	8.300	0.010	0.0	0.0	0.6	1.47	26.0	2.0
S1.001	51.70	4.35	8.032	0.010	0.0	0.0	0.6	1.00	17.7	2.0
S1.002	50.98	4.51	7.906	0.010	0.0	0.0	0.6	1.00	17.7	2.0
S1.003	50.42	4.64	7.736	0.015	0.0	0.0	0.8	1.30	51.6	2.9
S1.004	49.14	4.94	7.639	0.035	0.0	0.0	1.9	1.19	47.5	6.5
S1.005	48.09	5.20	7.459	0.035	0.0	0.0	1.9	1.19	47.4	6.5
S2.000	52.15	4.26	8.330	0.020	0.0	0.0	1.1	1.01	7.9	4.0
S1.006	47.84	5.27	7.302	0.055	0.0	0.0	2.8	1.19	47.4	10.0

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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)	Auto Design
S3.000	2.842	0.049	58.0	0.017	4.00	0.0	0.600	o	150	
S1.007	11.217	0.056	200.0	0.000	0.00	0.0	0.600	ooo	150	
S1.008	8.261	0.041	200.0	0.000	0.00	0.0	0.600	ooo	150	
S4.000	11.810	0.151	78.2	0.058	4.00	0.0	0.600	o	150	
S4.001	23.904	0.241	99.2	0.015	0.00	0.0	0.600	o	225	
S4.002	23.305	0.235	99.2	0.011	0.00	0.0	0.600	o	225	
S5.000	15.452	0.301	51.3	0.009	4.00	0.0	0.600	o	150	
S4.003	10.646	0.106	100.9	0.000	0.00	0.0	0.600	o	225	
S4.004	10.646	0.106	100.4	0.000	0.00	0.0	0.600	o	225	
S1.009	46.801	0.108	433.3	0.011	0.00	0.0	0.600	o	150	

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)
S3.000	53.23	4.04	7.400	0.017	0.0	0.0	1.0	1.32	23.4	3.5
S1.007	46.85	5.53	6.150	0.072	0.0	0.0	3.7	0.71	37.5	12.8
S1.008	46.14	5.73	6.100	0.072	0.0	0.0	3.7	0.71	37.5	12.8
S4.000	52.56	4.17	7.550	0.058	0.0	0.0	3.3	1.14	20.1	11.6
S4.001	51.15	4.48	7.324	0.073	0.0	0.0	4.0	1.31	52.2	14.2
S4.002	49.85	4.77	7.083	0.085	0.0	0.0	4.6	1.31	52.2	16.0
S5.000	52.51	4.18	8.300	0.009	0.0	0.0	0.5	1.41	24.9	1.8
S4.003	49.28	4.91	6.848	0.094	0.0	0.0	5.0	1.30	51.7	17.5
S4.004	48.72	5.04	6.743	0.094	0.0	0.0	5.0	1.30	51.9	17.5
S1.009	41.08	7.36	6.000	0.177	0.0	0.0	7.9	0.48	8.4«	27.5

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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)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
S1	8.930	0.630	Open Manhole	250	S1.000	8.300	150				
S2	8.700	0.668	Open Manhole	450	S1.001	8.032	150	S1.000	8.032	150	
S3	8.700	0.794	Open Manhole	450	S1.002	7.906	150	S1.001	7.906	150	
S4	8.870	1.134	Open Manhole	600	S1.003	7.736	225	S1.002	7.811	150	
S5	8.850	1.211	Open Manhole	600	S1.004	7.639	225	S1.003	7.639	225	
S6	8.700	1.241	Open Manhole	600	S1.005	7.459	225	S1.004	7.459	225	
S7	8.900	0.570	Open Manhole	250	S2.000	8.330	100				
S8	8.900	1.598	Open Manhole	600	S1.006	7.302	225	S1.005	7.302	225	
								S2.000	8.062	100	635
S17	8.400	1.000	Open Manhole	450	S3.000	7.400	150				
S9	8.650	2.500	Open Manhole	1200	S1.007	6.150	150	S1.006	7.264	225	1189
								S3.000	7.351	150	1201
Stank	8.500	2.406	Open Manhole	1200	S1.008	6.100	150	S1.007	6.094	150	
S10	8.950	1.400	Open Manhole	450	S4.000	7.550	150				
S11	9.000	1.676	Open Manhole	600	S4.001	7.324	225	S4.000	7.399	150	
S12	8.900	1.817	Open Manhole	600	S4.002	7.083	225	S4.001	7.083	225	
S13	8.900	0.600	Open Manhole	450	S5.000	8.300	150				
S14	9.000	2.152	Open Manhole	450	S4.003	6.848	225	S4.002	6.848	225	
								S5.000	7.999	150	1076
S15	8.750	2.008	Open Manhole	450	S4.004	6.743	225	S4.003	6.743	225	
S16	8.950	2.950	Open Manhole	2100	S1.009	6.000	150	S1.008	6.059	150	59
								S4.004	6.637	225	711
SOutfall	8.850	2.958	Open Manhole	0		OUTFALL		S1.009	5.892	150	

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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., (mm)	L*W
S1.000	o	150	S1	8.930	8.300	0.480	Open Manhole	250	
S1.001	o	150	S2	8.700	8.032	0.518	Open Manhole	450	
S1.002	o	150	S3	8.700	7.906	0.644	Open Manhole	450	
S1.003	o	225	S4	8.870	7.736	0.909	Open Manhole	600	
S1.004	o	225	S5	8.850	7.639	0.986	Open Manhole	600	
S1.005	o	225	S6	8.700	7.459	1.016	Open Manhole	600	
S2.000	o	100	S7	8.900	8.330	0.470	Open Manhole	250	
S1.006	o	225	S8	8.900	7.302	1.373	Open Manhole	600	
S3.000	o	150	S17	8.400	7.400	0.850	Open Manhole	450	
S1.007	ooo	150	S9	8.650	6.150	2.350	Open Manhole	1200	
S1.008	ooo	150	Stank	8.500	6.100	2.250	Open Manhole	1200	
S4.000	o	150	S10	8.950	7.550	1.250	Open Manhole	450	
S4.001	o	225	S11	9.000	7.324	1.451	Open Manhole	600	
S4.002	o	225	S12	8.900	7.083	1.592	Open Manhole	600	
S5.000	o	150	S13	8.900	8.300	0.450	Open Manhole	450	
S4.003	o	225	S14	9.000	6.848	1.927	Open Manhole	450	
S4.004	o	225	S15	8.750	6.743	1.783	Open Manhole	450	
S1.009	o	150	S16	8.950	6.000	2.800	Open Manhole	2100	

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
S1.000	12.639	47.2	S2	8.700	8.032	0.518	Open Manhole	450	
S1.001	12.702	100.8	S3	8.700	7.906	0.644	Open Manhole	450	
S1.002	9.547	100.5	S4	8.870	7.811	0.909	Open Manhole	600	
S1.003	9.834	101.4	S5	8.850	7.639	0.986	Open Manhole	600	
S1.004	21.558	119.8	S6	8.700	7.459	1.016	Open Manhole	600	
S1.005	18.816	119.8	S8	8.900	7.302	1.373	Open Manhole	600	
S2.000	15.679	58.5	S8	8.900	8.062	0.738	Open Manhole	600	
S1.006	4.522	120.0	S9	8.650	7.264	1.161	Open Manhole	1200	
S3.000	2.842	58.0	S9	8.650	7.351	1.149	Open Manhole	1200	
S1.007	11.217	200.0	Stank	8.500	6.094	2.256	Open Manhole	1200	
S1.008	8.261	200.0	S16	8.950	6.059	2.741	Open Manhole	2100	
S4.000	11.810	78.2	S11	9.000	7.399	1.451	Open Manhole	600	
S4.001	23.904	99.2	S12	8.900	7.083	1.592	Open Manhole	600	
S4.002	23.305	99.2	S14	9.000	6.848	1.927	Open Manhole	450	
S5.000	15.452	51.3	S14	9.000	7.999	0.851	Open Manhole	450	
S4.003	10.646	100.9	S15	8.750	6.743	1.783	Open Manhole	450	
S4.004	10.646	100.4	S16	8.950	6.637	2.089	Open Manhole	2100	
S1.009	46.801	433.3	SOutfall	8.850	5.892	2.808	Open Manhole	0	

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Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	User	-	100	0.010	0.010	0.010
1.001	-	-	100	0.000	0.000	0.000
1.002	-	-	100	0.000	0.000	0.000
1.003	User	-	100	0.005	0.005	0.005
1.004	User	-	100	0.016	0.016	0.016
	User	-	100	0.004	0.004	0.020
1.005	-	-	100	0.000	0.000	0.000
2.000	-	-	100	0.020	0.020	0.020
1.006	-	-	100	0.000	0.000	0.000
3.000	User	-	100	0.017	0.017	0.017
1.007	-	-	100	0.000	0.000	0.000
1.008	-	-	100	0.000	0.000	0.000
4.000	User	-	100	0.058	0.058	0.058
4.001	User	-	100	0.015	0.015	0.015
4.002	User	-	100	0.011	0.011	0.011
5.000	User	-	100	0.009	0.009	0.009
4.003	-	-	100	0.000	0.000	0.000
4.004	-	-	100	0.000	0.000	0.000
1.009	User	-	100	0.011	0.011	0.011
				Total	Total	Total
				0.177	0.177	0.177

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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S1.009	SOutfall	8.850	5.892	8.100	0	0
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Simulation Criteria for Storm

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
Hot Start (mins)	0	Inlet Coefficient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Winter
Return Period (years)	1	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.100	Storm Duration (mins)	30
Ratio R	0.350		

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Online Controls for Storm

Pump Manhole: S16, DS/PN: S1.009, Volume (m³): 10.9

Invert Level (m) 6.000

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	0.0000	1.200	0.0000

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Storage Structures for Storm

Cellular Storage Manhole: Stank, DS/PN: S1.008

Invert Level (m) 6.100 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.00000

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	104.5	104.5	1.600	104.5	182.9	1.601	0.0	182.9

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

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
 Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
 Hot Start Level (mm) 0 Inlet 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 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 19.100 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.350 Cv (Winter) 0.840

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, 180, 240, 360, 480, 600, 720, 960, 1440
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 40

									Water	Surcharged
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Level (m)	Depth (m)
S1.000	S1	15 Winter	1	+0%					8.323	-0.127
S1.001	S2	15 Summer	1	+0%	100/1440 Winter				8.061	-0.121
S1.002	S3	15 Summer	1	+0%	100/1440 Winter				7.936	-0.120
S1.003	S4	15 Winter	1	+0%	100/1440 Winter				7.767	-0.194
S1.004	S5	15 Winter	1	+0%	100/1440 Winter				7.685	-0.179
S1.005	S6	15 Winter	1	+0%	100/1440 Winter				7.505	-0.179
S2.000	S7	15 Winter	1	+0%	100/15 Summer				8.371	-0.059
S1.006	S8	15 Winter	1	+0%	100/720 Winter				7.374	-0.153
S3.000	S17	15 Winter	1	+0%	100/960 Winter				7.441	-0.109
S1.007	S9	1440 Winter	1	+0%	1/120 Winter				6.570	0.270
S1.008	Stank	1440 Winter	1	+0%	1/60 Winter				6.570	0.320
S4.000	S10	15 Winter	1	+0%	30/15 Summer				7.619	-0.081
S4.001	S11	15 Winter	1	+0%	100/960 Winter				7.392	-0.157
S4.002	S12	15 Winter	1	+0%	100/15 Summer				7.155	-0.153
S5.000	S13	15 Winter	1	+0%					8.322	-0.128
S4.003	S14	15 Winter	1	+0%	100/15 Summer				6.928	-0.145
S4.004	S15	15 Winter	1	+0%	30/960 Winter				6.822	-0.145
S1.009	S16	1440 Winter	1	+0%	1/15 Summer				6.580	0.430

		Flooded		Pipe		Level	
PN	US/MH Name	Volume (m ³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	S1	0.000	0.06		1.4	OK	
S1.001	S2	0.000	0.08		1.4	OK	
S1.002	S3	0.000	0.09		1.4	OK	
S1.003	S4	0.000	0.05		1.9	OK	
S1.004	S5	0.000	0.09		4.0	OK	
S1.005	S6	0.000	0.09		4.0	OK	
S2.000	S7	0.000	0.36		2.7	OK	

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

PN	US/MH Name	Flooded		Pipe		Status	Level Exceeded
		Volume (m ³)	Flow / Overflow Cap. (l/s)	Flow (l/s)			
S1.006	S8	0.000	0.22	6.6		OK	
S3.000	S17	0.000	0.17	2.3		OK	
S1.007	S9	0.000	0.02	0.6		SURCHARGED	
S1.008	Stank	0.000	0.08	2.5		SURCHARGED	
S4.000	S10	0.000	0.43	7.9		OK	
S4.001	S11	0.000	0.20	9.5		OK	
S4.002	S12	0.000	0.22	10.6		OK	
S5.000	S13	0.000	0.05	1.2		OK	
S4.003	S14	0.000	0.27	11.8		OK	
S4.004	S15	0.000	0.27	11.9		OK	
S1.009	S16	0.000	0.00	0.0		SURCHARGED	

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

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
 Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
 Hot Start Level (mm) 0 Inlet 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 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 19.100 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.350 Cv (Winter) 0.840

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, 180, 240, 360, 480, 600, 720, 960, 1440

Return Period(s) (years) 1, 30, 100

Climate Change (%) 0, 0, 40

									Water	Surcharged
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Level (m)	Depth (m)
S1.000	S1	15 Winter	30	+0%					8.337	-0.113
S1.001	S2	15 Winter	30	+0%	100/1440 Winter				8.078	-0.104
S1.002	S3	15 Summer	30	+0%	100/1440 Winter				7.953	-0.103
S1.003	S4	15 Summer	30	+0%	100/1440 Winter				7.788	-0.173
S1.004	S5	15 Winter	30	+0%	100/1440 Winter				7.718	-0.146
S1.005	S6	15 Winter	30	+0%	100/1440 Winter				7.539	-0.145
S2.000	S7	15 Winter	30	+0%	100/15 Summer				8.403	-0.027
S1.006	S8	15 Winter	30	+0%	100/720 Winter				7.429	-0.098
S3.000	S17	15 Winter	30	+0%	100/960 Winter				7.467	-0.083
S1.007	S9	1440 Winter	30	+0%	1/120 Winter				7.051	0.751
S1.008	Stank	1440 Winter	30	+0%	1/60 Winter				7.051	0.801
S4.000	S10	15 Summer	30	+0%	30/15 Summer				7.712	0.012
S4.001	S11	15 Winter	30	+0%	100/960 Winter				7.438	-0.111
S4.002	S12	15 Summer	30	+0%	100/15 Summer				7.207	-0.101
S5.000	S13	15 Winter	30	+0%					8.336	-0.114
S4.003	S14	1440 Winter	30	+0%	100/15 Summer				7.051	-0.022
S4.004	S15	1440 Winter	30	+0%	30/960 Winter				7.062	0.094
S1.009	S16	1440 Winter	30	+0%	1/15 Summer				7.065	0.915

Flooded			Pipe			Status	Level Exceeded
PN	US/MH Name	Volume (m ³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)		
S1.000	S1	0.000	0.14		3.3	OK	
S1.001	S2	0.000	0.21		3.3	OK	
S1.002	S3	0.000	0.21		3.3	OK	
S1.003	S4	0.000	0.12		5.1	OK	
S1.004	S5	0.000	0.27		11.5	OK	
S1.005	S6	0.000	0.27		11.3	OK	
S2.000	S7	0.000	0.88		6.7	OK	

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Fourth Floor Dean Park House 8-10 Dean Park Crescent Bournemouth Dorset BH1 1HL	Emsworth Full Network 5.5m x 19m x 1.6m deep	
Date 17/11/2017 16:06 File TRIAL.MDX	Designed by KD Checked by BK	
Micro Drainage	Network 2015.1	

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

PN	US/MH Name	Flooded		Pipe	Status	Level Exceeded
		Volume (m³)	Flow / Overflow Cap. (l/s)	Flow (l/s)		
S1.006	S8	0.000	0.60	17.9		OK
S3.000	S17	0.000	0.41	5.8		OK
S1.007	S9	0.000	0.04	1.2	SURCHARGED	
S1.008	Stank	0.000	0.04	1.4	SURCHARGED	
S4.000	S10	0.000	1.06	19.3	SURCHARGED	
S4.001	S11	0.000	0.50	24.1		OK
S4.002	S12	0.000	0.57	27.3		OK
S5.000	S13	0.000	0.13	3.0		OK
S4.003	S14	0.000	0.04	1.6		OK
S4.004	S15	0.000	0.04	1.6	SURCHARGED	
S1.009	S16	0.000	0.00	0.0	SURCHARGED	

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Fourth Floor Dean Park House 8-10 Dean Park Crescent Bournemouth Dorset BH1 1HL	Emsworth Full Network 5.5m x 19m x 1.6m deep	
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Micro Drainage	Network 2015.1	

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

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
Hot Start Level (mm) 0 Inlet 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 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 19.100 Cv (Summer) 0.750
Region England and Wales Ratio R 0.350 Cv (Winter) 0.840

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, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 0, 40

									Water	Surcharged
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Level (m)	Depth (m)
S1.000	S1	15 Winter	100	+40%					8.351	-0.099
S1.001	S2	1440 Winter	100	+40%	100/1440 Winter				8.227	0.045
S1.002	S3	1440 Winter	100	+40%	100/1440 Winter				8.228	0.172
S1.003	S4	1440 Winter	100	+40%	100/1440 Winter				8.228	0.267
S1.004	S5	1440 Winter	100	+40%	100/1440 Winter				8.228	0.364
S1.005	S6	1440 Winter	100	+40%	100/1440 Winter				8.229	0.545
S2.000	S7	15 Winter	100	+40%	100/15 Summer				8.751	0.321
S1.006	S8	1440 Winter	100	+40%	100/720 Winter				8.229	0.702
S3.000	S17	1440 Winter	100	+40%	100/960 Winter				8.229	0.679
S1.007	S9	1440 Winter	100	+40%	1/120 Winter				8.229	1.929
S1.008	Stank	1440 Winter	100	+40%	1/60 Winter				8.229	1.979
S4.000	S10	1440 Winter	100	+40%	30/15 Summer				8.229	0.529
S4.001	S11	1440 Winter	100	+40%	100/960 Winter				8.229	0.680
S4.002	S12	1440 Winter	100	+40%	100/15 Summer				8.229	0.921
S5.000	S13	15 Winter	100	+40%					8.349	-0.101
S4.003	S14	1440 Winter	100	+40%	100/15 Summer				8.229	1.156
S4.004	S15	1440 Winter	100	+40%	30/960 Winter				8.230	1.262
S1.009	S16	1440 Winter	100	+40%	1/15 Summer				8.230	2.080

		Flooded		Pipe			
PN	US/MH Name	Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	S1	0.000	0.25		6.0	OK	
S1.001	S2	0.000	0.02		0.3	SURCHARGED	
S1.002	S3	0.000	0.02		0.3	SURCHARGED	
S1.003	S4	0.000	0.01		0.5	SURCHARGED	
S1.004	S5	0.000	0.02		1.1	SURCHARGED	
S1.005	S6	0.000	0.02		1.1	SURCHARGED	
S2.000	S7	0.000	1.47		11.1	FLOOD RISK	

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

PN	US/MH Name	Flooded		Pipe		Status	Level Exceeded
		Volume (m ³)	Flow / Overflow Cap. (l/s)	Flow (l/s)			
S1.006	S8	0.000	0.06	1.7	SURCHARGED		
S3.000	S17	0.000	0.04	0.5	FLOOD RISK		
S1.007	S9	0.000	0.06	2.1	SURCHARGED		
S1.008	Stank	0.000	0.00	0.1	FLOOD RISK		
S4.000	S10	0.000	0.10	1.7	SURCHARGED		
S4.001	S11	0.000	0.05	2.2	SURCHARGED		
S4.002	S12	0.000	0.05	2.5	SURCHARGED		
S5.000	S13	0.000	0.24	5.5	OK		
S4.003	S14	0.000	0.06	2.8	SURCHARGED		
S4.004	S15	0.000	0.06	2.7	SURCHARGED		
S1.009	S16	0.000	0.00	0.0	SURCHARGED		