

Building Design Partnership Ltd		Page 7
11 Ducie Street Piccadilly Basin Manchester M1 2JB	ECMWF Proposed Building Network	
Date 16/05/2025 File ECMWF_BDP_SW_MD - Stage 4.9 (DE...	Designed by LJ Checked by JT	
Innovyze	Network 2020.1.3	

2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Building SW Network

PN	US/MH Name	Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.003	SW.10	0.58		14.0	OK	
1.004	Swale + Tank	0.58	18	7.5	OK	
1.005	SW.12	0.57		7.5	OK	
2.000	SW.14	0.08		17.9	OK	
1.006	SW.13	0.31		18.9	OK	
3.000	SW.22	0.37		12.3	OK	
3.001	SW.21	0.25		12.4	OK	
3.002	Wetland 2	0.20	16	6.3	OK	
3.003	SW.20	0.20		6.3	OK	
3.004	SW19	0.25		6.3	OK	
3.005	SW.18	0.19		6.2	OK	
4.000	SW.15	0.03		5.4	OK	
5.000	SW.16	0.06		9.3	OK	
3.006	SW.17	0.08		14.8	OK	
1.007	RWH+Storage	0.03		2.7	SURCHARGED	
1.008	SWPC	0.02		1.0	SURCHARGED	

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

Simulation Criteria

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

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.800 Cv (Summer) 0.750
Region England and Wales Ratio R 0.400 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0
Analysis Timestep 2.5 Second Increment (Extended)
DTS Status OFF
DVD Status ON
Inertia 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
Return Period(s) (years) 2, 30, 100
Climate Change (%) 0, 0, 40

WARNING: Half Drain Time has not been calculated as the structure is too full.

										Water	Surcharged	Flooded
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.		Level (m)	Depth (m)	Volume (m³)
1.000	SW.08	15 Winter	30	+0%	100/15 Summer					66.431	-0.095	0.000
1.001	SW.09	15 Winter	30	+0%	30/15 Summer					66.195	0.110	0.000
1.002	Wetland 1	15 Winter	30	+0%	30/15 Summer					66.060	0.110	0.000
1.003	SW.10	15 Winter	30	+0%	100/15 Summer					65.793	-0.032	0.000
1.004	Swale + Tank	600 Winter	30	+0%	30/180 Winter					65.776	0.226	0.000
1.005	SW.12	600 Winter	30	+0%	30/180 Winter					65.775	0.296	0.000
2.000	SW.14	15 Winter	30	+0%	100/120 Winter					66.014	-0.221	0.000
1.006	SW.13	600 Winter	30	+0%	30/120 Winter					65.775	0.371	0.000
3.000	SW.22	15 Winter	30	+0%	100/15 Summer					66.458	-0.082	0.000
3.001	SW.21	15 Winter	30	+0%	100/180 Winter					66.332	-0.115	0.000
3.002	Wetland 2	15 Winter	30	+0%	100/120 Winter					66.207	-0.118	0.000
3.003	SW.20	15 Winter	30	+0%	100/120 Winter					66.146	-0.120	0.000
3.004	SW19	15 Winter	30	+0%	100/60 Winter					66.088	-0.103	0.000
3.005	SW.18	15 Winter	30	+0%	100/60 Winter					65.976	-0.121	0.000
4.000	SW.15	15 Winter	30	+0%	100/120 Winter					65.925	-0.318	0.000
5.000	SW.16	15 Winter	30	+0%	100/60 Winter					65.892	-0.292	0.000
3.006	SW.17	600 Winter	30	+0%	100/60 Summer					65.775	-0.245	0.000
1.007	RWH+Storage	600 Winter	30	+0%	2/15 Summer					65.775	2.850	0.000
1.008	SWPC	600 Winter	30	+0%	2/15 Summer					65.774	2.901	0.000

								Half Drain	Pipe
PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Time (mins)	Flow (l/s)	Status	Level Exceeded		
1.000	SW.08	0.28			5.6	OK			
1.001	SW.09	1.09			23.1	SURCHARGED			
1.002	Wetland 1	1.39			5	18.8	SURCHARGED		

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

PN	US/MH Name	Flow / Overflow Cap. (l/s)	Half Drain Pipe		Status	Level Exceeded
			Time (mins)	Flow (l/s)		
1.003	SW.10	0.95		22.8	OK	
1.004	Swale + Tank	0.23	258	3.0	SURCHARGED	
1.005	SW.12	0.23		3.0	SURCHARGED	
2.000	SW.14	0.15		34.0	OK	
1.006	SW.13	0.10		6.2	SURCHARGED	
3.000	SW.22	0.71		23.3	OK	
3.001	SW.21	0.48		23.5	OK	
3.002	Wetland 2	0.46	10	14.3	OK	
3.003	SW.20	0.44		14.2	OK	
3.004	SW19	0.57		14.1	OK	
3.005	SW.18	0.44		14.1	OK	
4.000	SW.15	0.06		10.2	OK	
5.000	SW.16	0.11		17.6	OK	
3.006	SW.17	0.02		4.8	OK	
1.007	RWH+Storage	0.07		6.2	SURCHARGED	
1.008	SWPC	0.02		1.0	SURCHARGED	

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

Simulation Criteria

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

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.800 Cv (Summer) 0.750
Region England and Wales Ratio R 0.400 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0
Analysis Timestep 2.5 Second Increment (Extended)
DTS Status OFF
DVD Status ON
Inertia 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
Return Period(s) (years) 2, 30, 100
Climate Change (%) 0, 0, 40

WARNING: Half Drain Time has not been calculated as the structure is too full.

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level	Surcharged Depth	Flooded Volume
									(m)	(m)	(m³)
1.000	SW.08	15 Winter	100	+40%	100/15 Summer				66.865	0.339	0.000
1.001	SW.09	15 Winter	100	+40%	30/15 Summer				66.756	0.671	0.000
1.002	Wetland 1	960 Winter	100	+40%	30/15 Summer				66.697	0.747	0.000
1.003	SW.10	960 Winter	100	+40%	100/15 Summer				66.696	0.871	0.000
1.004	Swale + Tank	960 Winter	100	+40%	30/180 Winter				66.695	1.145	0.000
1.005	SW.12	960 Winter	100	+40%	30/180 Winter				66.694	1.215	0.000
2.000	SW.14	960 Winter	100	+40%	100/120 Winter				66.693	0.458	0.000
1.006	SW.13	960 Winter	100	+40%	30/120 Winter				66.693	1.289	0.000
3.000	SW.22	960 Winter	100	+40%	100/15 Summer				66.693	0.153	0.000
3.001	SW.21	960 Winter	100	+40%	100/180 Winter				66.693	0.246	0.000
3.002	Wetland 2	960 Winter	100	+40%	100/120 Winter				66.693	0.368	0.000
3.003	SW.20	960 Winter	100	+40%	100/120 Winter				66.692	0.426	0.000
3.004	SW19	960 Winter	100	+40%	100/60 Winter				66.692	0.501	0.000
3.005	SW.18	960 Winter	100	+40%	100/60 Winter				66.692	0.595	0.000
4.000	SW.15	960 Winter	100	+40%	100/120 Winter				66.692	0.449	0.000
5.000	SW.16	960 Winter	100	+40%	100/60 Winter				66.693	0.509	0.000
3.006	SW.17	960 Winter	100	+40%	100/60 Summer				66.693	0.673	0.000
1.007	RWH+Storage	960 Winter	100	+40%	2/15 Summer				66.693	3.768	0.000
1.008	SWPC	960 Winter	100	+40%	2/15 Summer				66.692	3.819	0.000

PN	US/MH Name	Flow / Overflow		Half Drain Time	Pipe Flow	Status	Level Exceeded
		Cap.	(l/s)	(mins)	(l/s)		
1.000	SW.08	0.51			10.3	FLOOD RISK	
1.001	SW.09	1.99			42.0	FLOOD RISK	
1.002	Wetland 1	0.23		900	3.1	FLOOD RISK	

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

PN	US/MH Name	Flow / Overflow		Half Drain Pipe Time	Pipe Flow	Status	Level
		Cap.	(l/s)	(mins)	(l/s)		Exceeded
1.003	SW.10	0.16			3.7	FLOOD RISK	
1.004	Swale + Tank	0.26			3.4	FLOOD RISK	
1.005	SW.12	0.26			3.4	FLOOD RISK	
2.000	SW.14	0.02			4.0	SURCHARGED	
1.006	SW.13	0.11			7.0	FLOOD RISK	
3.000	SW.22	0.08			2.8	SURCHARGED	
3.001	SW.21	0.06			2.8	FLOOD RISK	
3.002	Wetland 2	0.09		853	2.8	FLOOD RISK	
3.003	SW.20	0.09			2.8	FLOOD RISK	
3.004	SW19	0.11			2.8	FLOOD RISK	
3.005	SW.18	0.08			2.7	FLOOD RISK	
4.000	SW.15	0.01			1.2	FLOOD RISK	
5.000	SW.16	0.01			2.0	FLOOD RISK	
3.006	SW.17	0.03			5.7	FLOOD RISK	
1.007	RWH+Storage	0.10			9.1	FLOOD RISK	
1.008	SWPC	0.02			1.0	FLOOD RISK	

Appendix D – Thames Water Correspondence