

BDN Ltd		Page 1
The Old School Simpson Street Sunderland SR4 6DR	Applied Nutritition Acornfield Road Knowsley	
Date 04/02/2026 09:18 File S4711-BDN-XX-XX-CA-C-0001...	Designed by C Agar Checked by A Webb	
Innovyze	Network 2020.1.3	

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)	100	PIMP (%)	100
M5-60 (mm)	19.600	Add Flow / Climate Change (%)	0
Ratio R	0.383	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

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)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	20.632	0.140	147.4	0.019	5.00	0.0	0.600		o	150	Pipe/Conduit	
1.001	20.358	0.140	145.4	0.021	0.00	0.0	0.600		o	225	Pipe/Conduit	
1.002	57.869	0.290	199.5	0.217	0.00	0.0	0.600		o	375	Pipe/Conduit	
1.003	57.869	0.290	199.5	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
1.004	34.079	0.135	252.4	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
2.000	106.035	0.425	249.5	0.034	5.00	0.0		0.075	→ o →		Filter Drain	
2.001	25.486	0.640	39.8	0.060	0.00	0.0		0.075	→ o →		Filter Drain	
2.002	17.158	0.070	245.1	0.021	0.00	0.0		0.075	→ o →		Filter Drain	
2.003	3.817	0.020	190.9	0.016	0.00	0.0	0.600		o	300	Pipe/Conduit	
1.005	23.353	0.105	222.4	0.000	0.00	0.0	0.600		o	375	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	50.00	5.42	38.575	0.019	0.0	0.0	0.0	0.83	14.6	2.6
1.001	50.00	5.73	38.360	0.041	0.0	0.0	0.0	1.08	43.0	5.5
1.002	50.00	6.48	38.070	0.258	0.0	0.0	0.0	1.28	141.3	34.9
1.003	50.00	7.24	37.780	0.258	0.0	0.0	0.0	1.28	141.3	34.9
1.004	50.00	7.74	37.490	0.258	0.0	0.0	0.0	1.14	125.4	34.9
2.000	50.00	18.35	38.950	0.034	0.0	0.0	0.0	0.13	23.7	4.6
2.001	50.00	19.40	38.525	0.094	0.0	0.0	0.0	0.41	140.2	12.7
2.002	50.00	21.08	37.885	0.115	0.0	0.0	0.0	0.17	67.7	15.5
2.003	50.00	21.13	37.815	0.130	0.0	0.0	0.0	1.13	80.2	17.7
1.005	50.00	21.46	37.355	0.388	0.0	0.0	0.0	1.21	133.7	52.6

BDN Ltd		Page 2
The Old School Simpson Street Sunderland SR4 6DR	Applied Nutritition Acornfield Road Knowsley	
Date 04/02/2026 09:18 File S4711-BDN-XX-XX-CA-C-0001...	Designed by C Agar Checked by A Webb	
Innovyze	Network 2020.1.3	

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)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
3.000	39.113	0.185	211.4	0.035	5.00	0.0	0.600		o	225	Pipe/Conduit	
3.001	39.006	0.205	190.3	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
3.002	38.925	0.195	199.6	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
3.003	39.015	0.195	200.1	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
3.004	30.416	0.640	47.5	0.340	0.00	0.0	0.600		o	375	Pipe/Conduit	
4.000	30.371	1.060	28.7	0.314	5.00	0.0	0.600		o	375	Pipe/Conduit	
3.005	14.305	0.195	73.4	0.146	0.00	0.0	0.600		o	375	Pipe/Conduit	
3.006	14.305	0.030	476.8	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
1.006	16.319	0.110	148.4	0.059	0.00	0.0	0.600		o	150	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)
3.000	50.00	5.73	38.910	0.035	0.0	0.0	0.0	0.90	35.6	4.8
3.001	50.00	6.42	38.725	0.035	0.0	0.0	0.0	0.94	37.6	4.8
3.002	50.00	7.12	38.520	0.035	0.0	0.0	0.0	0.92	36.7	4.8
3.003	50.00	7.83	38.325	0.035	0.0	0.0	0.0	0.92	36.6	4.8
3.004	50.00	8.02	37.975	0.375	0.0	0.0	0.0	2.63	290.9	50.8
4.000	50.00	5.15	38.395	0.314	0.0	0.0	0.0	3.40	375.1	42.5
3.005	50.00	8.13	37.335	0.835	0.0	0.0	0.0	2.12	233.9	113.1
3.006	50.00	8.42	37.140	0.835	0.0	0.0	0.0	0.82	90.9«	113.1
1.006	50.00	21.79	37.110	1.283	0.0	0.0	0.0	0.82	14.5«	173.7

BDN Ltd		Page 4
The Old School Simpson Street Sunderland SR4 6DR	Applied Nutritition Acornfield Road Knowsley	
Date 04/02/2026 09:18 File S4711-BDN-XX-XX-CA-C-0001...	Designed by C Agar Checked by A Webb	
Innovyze	Network 2020.1.3	

Online Controls for Storm

Hydro-Brake® Optimum Manhole: MH 10, DS/PN: 1.006, Volume (m³): 8.1

Unit Reference	MD-SHE-0092-5000-2000-5000
Design Head (m)	2.000
Design Flow (l/s)	5.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	92
Invert Level (m)	37.110
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	2.000	5.0	Kick-Flo®	0.816	3.3
Flush-Flo™	0.398	4.1	Mean Flow over Head Range	-	3.9

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	2.9	1.200	3.9	3.000	6.0	7.000	9.0
0.200	3.8	1.400	4.2	3.500	6.5	7.500	9.3
0.300	4.1	1.600	4.5	4.000	6.9	8.000	9.6
0.400	4.1	1.800	4.8	4.500	7.3	8.500	9.9
0.500	4.1	2.000	5.0	5.000	7.7	9.000	10.2
0.600	4.0	2.200	5.2	5.500	8.0	9.500	10.4
0.800	3.4	2.400	5.4	6.000	8.4		
1.000	3.6	2.600	5.6	6.500	8.7		

BDN Ltd		Page 5																																																																																																																																												
The Old School Simpson Street Sunderland SR4 6DR	Applied Nutritition Acornfield Road Knowsley																																																																																																																																													
Date 04/02/2026 09:18 File S4711-BDN-XX-XX-CA-C-0001...	Designed by C Agar Checked by A Webb																																																																																																																																													
Innovyze	Network 2020.1.3																																																																																																																																													
<u>Storage Structures for Storm</u> <u>Filter Drain Pipe: 2.000</u> <table><tr><td>Manning's N</td><td>0.075</td><td>Trench Length (m)</td><td>106.0</td></tr><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Pipe Diameter (m)</td><td>0.225</td></tr><tr><td>Infiltration Coefficient Side (m/hr)</td><td>0.00000</td><td>Pipe Depth above Invert (m)</td><td>0.000</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Number of Pipes</td><td>1</td></tr><tr><td>Porosity</td><td>0.30</td><td>Slope (1:X)</td><td>249.5</td></tr><tr><td>Invert Level (m)</td><td>38.950</td><td>Cap Volume Depth (m)</td><td>0.000</td></tr><tr><td>Trench Width (m)</td><td>0.6</td><td>Cap Infiltration Depth (m)</td><td>0.000</td></tr></table> <u>Filter Drain Pipe: 2.001</u> <table><tr><td>Manning's N</td><td>0.075</td><td>Trench Length (m)</td><td>25.5</td></tr><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Pipe Diameter (m)</td><td>0.225</td></tr><tr><td>Infiltration Coefficient Side (m/hr)</td><td>0.00000</td><td>Pipe Depth above Invert (m)</td><td>0.000</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Number of Pipes</td><td>1</td></tr><tr><td>Porosity</td><td>0.30</td><td>Slope (1:X)</td><td>39.8</td></tr><tr><td>Invert Level (m)</td><td>38.525</td><td>Cap Volume Depth (m)</td><td>0.000</td></tr><tr><td>Trench Width (m)</td><td>1.0</td><td>Cap Infiltration Depth (m)</td><td>0.000</td></tr></table> <u>Filter Drain Pipe: 2.002</u> <table><tr><td>Manning's N</td><td>0.075</td><td>Trench Length (m)</td><td>17.2</td></tr><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Pipe Diameter (m)</td><td>0.225</td></tr><tr><td>Infiltration Coefficient Side (m/hr)</td><td>0.00000</td><td>Pipe Depth above Invert (m)</td><td>0.000</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Number of Pipes</td><td>1</td></tr><tr><td>Porosity</td><td>0.30</td><td>Slope (1:X)</td><td>245.1</td></tr><tr><td>Invert Level (m)</td><td>37.885</td><td>Cap Volume Depth (m)</td><td>0.000</td></tr><tr><td>Trench Width (m)</td><td>1.0</td><td>Cap Infiltration Depth (m)</td><td>0.000</td></tr></table> <u>Porous Car Park Manhole: MH 7, DS/PN: 3.004</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>53.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>4.8</td></tr><tr><td>Max Percolation (l/s)</td><td>70.7</td><td>Slope (1:X)</td><td>0.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>39.340</td><td>Membrane Depth (mm)</td><td>130</td></tr></table> <u>Porous Car Park Manhole: MH 8, DS/PN: 4.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>24.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>4.8</td></tr><tr><td>Max Percolation (l/s)</td><td>32.0</td><td>Slope (1:X)</td><td>0.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>39.535</td><td>Membrane Depth (mm)</td><td>130</td></tr></table> <u>Cellular Storage Manhole: ATT, DS/PN: 3.006</u> <table><tr><td>Invert Level (m)</td><td>37.140</td><td>Infiltration Coefficient Side (m/hr)</td><td>0.00000</td></tr><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Safety Factor</td><td>2.0</td></tr></table>			Manning's N	0.075	Trench Length (m)	106.0	Infiltration Coefficient Base (m/hr)	0.00000	Pipe Diameter (m)	0.225	Infiltration Coefficient Side (m/hr)	0.00000	Pipe Depth above Invert (m)	0.000	Safety Factor	2.0	Number of Pipes	1	Porosity	0.30	Slope (1:X)	249.5	Invert Level (m)	38.950	Cap Volume Depth (m)	0.000	Trench Width (m)	0.6	Cap Infiltration Depth (m)	0.000	Manning's N	0.075	Trench Length (m)	25.5	Infiltration Coefficient Base (m/hr)	0.00000	Pipe Diameter (m)	0.225	Infiltration Coefficient Side (m/hr)	0.00000	Pipe Depth above Invert (m)	0.000	Safety Factor	2.0	Number of Pipes	1	Porosity	0.30	Slope (1:X)	39.8	Invert Level (m)	38.525	Cap Volume Depth (m)	0.000	Trench Width (m)	1.0	Cap Infiltration Depth (m)	0.000	Manning's N	0.075	Trench Length (m)	17.2	Infiltration Coefficient Base (m/hr)	0.00000	Pipe Diameter (m)	0.225	Infiltration Coefficient Side (m/hr)	0.00000	Pipe Depth above Invert (m)	0.000	Safety Factor	2.0	Number of Pipes	1	Porosity	0.30	Slope (1:X)	245.1	Invert Level (m)	37.885	Cap Volume Depth (m)	0.000	Trench Width (m)	1.0	Cap Infiltration Depth (m)	0.000	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	53.0	Membrane Percolation (mm/hr)	1000	Length (m)	4.8	Max Percolation (l/s)	70.7	Slope (1:X)	0.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	39.340	Membrane Depth (mm)	130	Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	24.0	Membrane Percolation (mm/hr)	1000	Length (m)	4.8	Max Percolation (l/s)	32.0	Slope (1:X)	0.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	39.535	Membrane Depth (mm)	130	Invert Level (m)	37.140	Infiltration Coefficient Side (m/hr)	0.00000	Infiltration Coefficient Base (m/hr)	0.00000	Safety Factor	2.0
Manning's N	0.075	Trench Length (m)	106.0																																																																																																																																											
Infiltration Coefficient Base (m/hr)	0.00000	Pipe Diameter (m)	0.225																																																																																																																																											
Infiltration Coefficient Side (m/hr)	0.00000	Pipe Depth above Invert (m)	0.000																																																																																																																																											
Safety Factor	2.0	Number of Pipes	1																																																																																																																																											
Porosity	0.30	Slope (1:X)	249.5																																																																																																																																											
Invert Level (m)	38.950	Cap Volume Depth (m)	0.000																																																																																																																																											
Trench Width (m)	0.6	Cap Infiltration Depth (m)	0.000																																																																																																																																											
Manning's N	0.075	Trench Length (m)	25.5																																																																																																																																											
Infiltration Coefficient Base (m/hr)	0.00000	Pipe Diameter (m)	0.225																																																																																																																																											
Infiltration Coefficient Side (m/hr)	0.00000	Pipe Depth above Invert (m)	0.000																																																																																																																																											
Safety Factor	2.0	Number of Pipes	1																																																																																																																																											
Porosity	0.30	Slope (1:X)	39.8																																																																																																																																											
Invert Level (m)	38.525	Cap Volume Depth (m)	0.000																																																																																																																																											
Trench Width (m)	1.0	Cap Infiltration Depth (m)	0.000																																																																																																																																											
Manning's N	0.075	Trench Length (m)	17.2																																																																																																																																											
Infiltration Coefficient Base (m/hr)	0.00000	Pipe Diameter (m)	0.225																																																																																																																																											
Infiltration Coefficient Side (m/hr)	0.00000	Pipe Depth above Invert (m)	0.000																																																																																																																																											
Safety Factor	2.0	Number of Pipes	1																																																																																																																																											
Porosity	0.30	Slope (1:X)	245.1																																																																																																																																											
Invert Level (m)	37.885	Cap Volume Depth (m)	0.000																																																																																																																																											
Trench Width (m)	1.0	Cap Infiltration Depth (m)	0.000																																																																																																																																											
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	53.0																																																																																																																																											
Membrane Percolation (mm/hr)	1000	Length (m)	4.8																																																																																																																																											
Max Percolation (l/s)	70.7	Slope (1:X)	0.0																																																																																																																																											
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																											
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																											
Invert Level (m)	39.340	Membrane Depth (mm)	130																																																																																																																																											
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	24.0																																																																																																																																											
Membrane Percolation (mm/hr)	1000	Length (m)	4.8																																																																																																																																											
Max Percolation (l/s)	32.0	Slope (1:X)	0.0																																																																																																																																											
Safety Factor	2.0	Depression Storage (mm)	5																																																																																																																																											
Porosity	0.30	Evaporation (mm/day)	3																																																																																																																																											
Invert Level (m)	39.535	Membrane Depth (mm)	130																																																																																																																																											
Invert Level (m)	37.140	Infiltration Coefficient Side (m/hr)	0.00000																																																																																																																																											
Infiltration Coefficient Base (m/hr)	0.00000	Safety Factor	2.0																																																																																																																																											
©1982-2020 Innovyze																																																																																																																																														

BDN Ltd		Page 6
The Old School Simpson Street Sunderland SR4 6DR	Applied Nutritition Acornfield Road Knowsley	
Date 04/02/2026 09:18 File S4711-BDN-XX-XX-CA-C-0001...	Designed by C Agar Checked by A Webb	
Innovyze	Network 2020.1.3	

Cellular Storage Manhole: ATT, DS/PN: 3.006

Porosity 0.95

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	504.0	0.0	1.300	504.0	0.0
0.100	504.0	0.0	1.400	504.0	0.0
0.200	504.0	0.0	1.500	504.0	0.0
0.300	504.0	0.0	1.600	504.0	0.0
0.400	504.0	0.0	1.700	504.0	0.0
0.500	504.0	0.0	1.800	504.0	0.0
0.600	504.0	0.0	1.900	0.0	0.0
0.700	504.0	0.0	2.000	0.0	0.0
0.800	504.0	0.0	2.100	0.0	0.0
0.900	504.0	0.0	2.200	0.0	0.0
1.000	504.0	0.0	2.300	0.0	0.0
1.100	504.0	0.0	2.400	0.0	0.0
1.200	504.0	0.0	2.500	0.0	0.0

Porous Car Park Manhole: MH 10, DS/PN: 1.006

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	49.2
Membrane Percolation (mm/hr)	1000	Length (m)	9.6
Max Percolation (l/s)	131.2	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	38.980	Membrane Depth (mm)	130

BDN Ltd		Page 8
The Old School Simpson Street Sunderland SR4 6DR	Applied Nutritition Acornfield Road Knowsley	
Date 04/02/2026 09:18 File S4711-BDN-XX-XX-CA-C-0001...	Designed by C Agar Checked by A Webb	
Innovyze		Network 2020.1.3

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

PN	US/MH Name	Surcharged Flooded		Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
		Depth (m)	Volume (m³)						
1.000	MH 1	-0.100	0.000	0.24			3.3	OK	
1.001	MH 2	-0.163	0.000	0.17			6.5	OK	
1.002	MH 3	-0.236	0.000	0.29			37.7	OK	
1.003	MH 4	-0.239	0.000	0.28			36.6	OK	
1.004	MH 5	-0.225	0.000	0.32			35.6	OK	
2.000	FD IC1	-0.678	0.000	0.14		8	3.4	OK	
2.001	FD IC 2	-0.966	0.000	0.06		13	8.5	OK	
2.002	FD IC 3	-1.029	0.000	0.16		8	10.5	OK	
2.003	FD IC 3	-0.199	0.000	0.24			12.0	OK	
1.005	MH 6	-0.153	0.000	0.07			8.1	OK	
3.000	IC 1	-0.160	0.000	0.18			6.0	OK	
3.001	IC 2	-0.163	0.000	0.16			5.9	OK	
3.002	IC 3	-0.163	0.000	0.16			5.7	OK	
3.003	IC 4	-0.164	0.000	0.16			5.7	OK	
3.004	MH 7	-0.259	0.000	0.21		8	53.6	OK	
4.000	MH 8	-0.273	0.000	0.16		6	54.6	OK	
3.005	MH 9	-0.128	0.000	0.75			129.6	OK	
3.006	ATT	0.062	0.000	0.07		473	4.0	SURCHARGED	
1.006	MH 10	0.316	0.000	0.31		379	4.1	SURCHARGED	

BDN Ltd		Page 10
The Old School Simpson Street Sunderland SR4 6DR	Applied Nutritition Acornfield Road Knowsley	
Date 04/02/2026 09:18 File S4711-BDN-XX-XX-CA-C-0001...	Designed by C Agar Checked by A Webb	
Innovyze		Network 2020.1.3

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

PN	US/MH Name	Surcharged		Flooded		Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
		Depth (m)	Volume (m³)	Flow	Volume						
1.000	MH 1	-0.078	0.000	0.46					6.3	OK	
1.001	MH 2	-0.132	0.000	0.35					13.5	OK	
1.002	MH 3	-0.146	0.000	0.65					86.0	OK	
1.003	MH 4	-0.099	0.000	0.05					7.2	OK	
1.004	MH 5	0.232	0.000	0.06					6.9	SURCHARGED	
2.000	FD IC1	-0.548	0.000	0.26				8	6.1	OK	
2.001	FD IC 2	-0.899	0.000	0.13				12	18.6	OK	
2.002	FD IC 3	-0.826	0.000	0.33				5	22.2	OK	
2.003	FD IC 3	-0.074	0.000	0.06					2.9	OK	
1.005	MH 6	0.396	0.000	0.09					10.3	SURCHARGED	
3.000	IC 1	-0.133	0.000	0.34					11.4	OK	
3.001	IC 2	-0.138	0.000	0.31					11.1	OK	
3.002	IC 3	-0.138	0.000	0.31					10.8	OK	
3.003	IC 4	-0.139	0.000	0.31					10.8	OK	
3.004	MH 7	-0.181	0.000	0.49				5	125.7	OK	
4.000	MH 8	-0.231	0.000	0.31				6	103.8	OK	
3.005	MH 9	0.358	0.000	0.13					22.8	SURCHARGED	
3.006	ATT	0.553	0.000	0.12					6.9	SURCHARGED	
1.006	MH 10	0.876	0.000	0.31					4.1	SURCHARGED	

BDN Ltd		Page 12
The Old School Simpson Street Sunderland SR4 6DR	Applied Nutritition Acornfield Road Knowsley	
Date 04/02/2026 09:18 File S4711-BDN-XX-XX-CA-C-0001...	Designed by C Agar Checked by A Webb	
Innovyze	Network 2020.1.3	

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

PN	US/MH Name	Surcharged Flooded		Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
		Depth (m)	Volume (m³)					
1.000	MH 1	0.419	0.000	0.29		4.0	SURCHARGED	
1.001	MH 2	0.571	0.000	0.21		8.3	SURCHARGED	
1.002	MH 3	0.687	0.000	0.65		85.5	SURCHARGED	
1.003	MH 4	0.954	0.000	0.36		47.4	SURCHARGED	
1.004	MH 5	1.210	0.000	0.09		10.1	SURCHARGED	
2.000	FD IC1	-0.219	0.000	0.42	9	9.9	FLOOD RISK	
2.001	FD IC 2	-0.512	0.000	0.03	177	4.3	OK	
2.002	FD IC 3	-0.046	0.000	0.07	813	4.4	FLOOD RISK	
2.003	FD IC 3	0.959	0.000	0.14		6.7	SURCHARGED	
1.005	MH 6	1.344	0.000	0.13		15.0	SURCHARGED	
3.000	IC 1	0.307	0.000	0.61		20.6	SURCHARGED	
3.001	IC 2	0.429	0.000	0.72		25.8	SURCHARGED	
3.002	IC 3	0.575	0.000	0.90		31.3	SURCHARGED	
3.003	IC 4	0.729	0.000	1.04		35.9	SURCHARGED	
3.004	MH 7	0.947	0.000	0.76	6	195.7	SURCHARGED	
4.000	MH 8	0.475	0.000	0.55	3	183.0	SURCHARGED	
3.005	MH 9	1.367	0.000	0.19		33.3	SURCHARGED	
3.006	ATT	1.560	0.000	0.12		6.8	SURCHARGED	
1.006	MH 10	1.813	0.000	0.37	71	5.0	SURCHARGED	