

Nolan Associates		Page 2
Edgbaston House Hadley Road Birmingham B16 8NH	Peterchurch Primary School Peterchurch Hereforeshire	
Date 10/06/2025	Designed by PK	
File 2024-067 SW Network Des...	Checked by KAP	
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)	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.005	35.774	0.133	269.0	0.070	0.00	0.0	0.600	o	375	Pipe/Conduit	
S4.000	34.256	0.133	257.6	0.100	5.00	0.0	0.600	o	225	Pipe/Conduit	
S4.001	19.800	0.109	181.7	0.070	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.006	3.995	0.038	105.1	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S1.007	25.759	0.316	81.6	0.000	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)
S1.005	18.29	30.00	121.628	0.554	0.0	0.0	0.0	1.10	121.5	27.4
S4.000	43.63	5.70	121.750	0.100	0.0	0.0	0.0	0.81	32.2	11.8
S4.001	42.56	6.05	121.617	0.170	0.0	0.0	0.0	0.97	38.4	19.6
S1.006	18.29	30.00	121.508	0.724	0.0	0.0	0.0	0.98	17.3«	35.9
S1.007	18.29	30.00	121.470	0.724	0.0	0.0	0.0	1.11	19.7«	35.9

Nolan Associates		Page 3
Edgbaston House Hadley Road Birmingham B16 8NH		Peterchurch Primary School Peterchurch Hereforeshire
Date 10/06/2025 File 2024-067 SW Network Des...		Designed by PK Checked by KAP
Innovyze		Network 2020.1.3



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)	PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
S1	123.900	1.150	Open Manhole	600	S1.000	122.750	225				
S2	124.050	1.479	Open Manhole	600	S1.001	122.571	225	S1.000	122.571	225	
SL01	124.200	0.800	Open Manhole	600	S2.000	123.400	150				
S3	124.020	1.780	Open Manhole	1200	S1.002	122.240	300	S1.001	122.315	225	
								S2.000	122.392	150	
S4	123.980	1.865	Open Manhole	1200	S1.003	122.115	300	S1.002	122.115	300	
S5	124.050	2.282	Open Manhole	1350	S1.004	121.768	375	S1.003	121.843	300	
S7	124.000	2.100	Open Manhole	600	S3.000	121.900	150				
S8	123.700	2.072	Open Manhole	1350	S1.005	121.628	375	S1.004	121.628	375	
								S3.000	121.772	150	
S9	122.950	1.200	Open Manhole	600	S4.000	121.750	225				
S10	123.000	1.383	Open Manhole	1200	S4.001	121.617	225	S4.000	121.617	225	
S11	123.000	1.505	Open Manhole	1500	S1.006	121.508	150	S1.005	121.495	375	
								S4.001	121.508	225	
S10	122.910	1.440	Open Manhole	1200	S1.007	121.470	150	S1.006	121.470	150	
SExMH	121.610	0.456	Open Manhole	0		OUTFALL		S1.007	121.154	150	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S1	334658.875	238497.621	334658.875	238497.621	Required	
S2	334658.814	238516.316	334658.814	238516.316	Required	
SL01	334649.144	238566.587	334649.144	238566.587	Required	
S3	334678.104	238532.918	334678.104	238532.918	Required	
S4	334686.561	238540.156	334686.561	238540.156	Required	
S5	334713.474	238508.733	334713.474	238508.733	Required	
S7	334680.083	238481.317	334680.083	238481.317	Required	

Nolan Associates		Page 4
Edgbaston House Hadley Road Birmingham B16 8NH	Peterchurch Primary School Peterchurch Hereforeshire	
Date 10/06/2025 File 2024-067 SW Network Des...	Designed by PK Checked by KAP	
Innovyze	Network 2020.1.3	

Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S8	334684.977	238475.665	334684.977	238475.665	Required	
S9	334625.226	238492.672	334625.226	238492.672	Required	
S10	334644.321	238464.232	334644.321	238464.232	Required	
S11	334659.057	238451.008	334659.057	238451.008	Required	
S10	334656.091	238448.332	334656.091	238448.332	Required	
SExMH	334643.518	238425.850			No Entry	

Nolan Associates		Page 5
Edgbaston House Hadley Road Birmingham B16 8NH	Peterchurch Primary School Peterchurch Hereforeshire	
Date 10/06/2025	Designed by PK	
File 2024-067 SW Network Des...	Checked by KAP	
Innovyze	Network 2020.1.3	

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)
S1.000	o	225	S1	123.900	122.750	0.925	Open Manhole	600
S1.001	o	225	S2	124.050	122.571	1.254	Open Manhole	600
S2.000	o	150	SL01	124.200	123.400	0.650	Open Manhole	600
S1.002	o	300	S3	124.020	122.240	1.480	Open Manhole	1200
S1.003	o	300	S4	123.980	122.115	1.565	Open Manhole	1200
S1.004	o	375	S5	124.050	121.768	1.907	Open Manhole	1350
S3.000	o	150	S7	124.000	121.900	1.950	Open Manhole	600
S1.005	o	375	S8	123.700	121.628	1.697	Open Manhole	1350
S4.000	o	225	S9	122.950	121.750	0.975	Open Manhole	600
S4.001	o	225	S10	123.000	121.617	1.158	Open Manhole	1200
S1.006	o	150	S11	123.000	121.508	1.342	Open Manhole	1500
S1.007	o	150	S10	122.910	121.470	1.290	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)
S1.000	18.695	104.4	S2	124.050	122.571	1.254	Open Manhole	600
S1.001	25.451	99.4	S3	124.020	122.315	1.480	Open Manhole	1200
S2.000	44.411	44.1	S3	124.020	122.392	1.478	Open Manhole	1200
S1.002	11.131	89.0	S4	123.980	122.115	1.565	Open Manhole	1200
S1.003	41.374	152.1	S5	124.050	121.843	1.907	Open Manhole	1350
S1.004	43.653	311.8	S8	123.700	121.628	1.697	Open Manhole	1350
S3.000	7.476	58.4	S8	123.700	121.772	1.778	Open Manhole	1350
S1.005	35.774	269.0	S11	123.000	121.495	1.130	Open Manhole	1500
S4.000	34.256	257.6	S10	123.000	121.617	1.158	Open Manhole	1200
S4.001	19.800	181.7	S11	123.000	121.508	1.267	Open Manhole	1500
S1.006	3.995	105.1	S10	122.910	121.470	1.290	Open Manhole	1200
S1.007	25.759	81.6	SExMH	121.610	121.154	0.306	Open Manhole	0

Nolan Associates		Page 6
Edgbaston House Hadley Road Birmingham B16 8NH	Peterchurch Primary School Peterchurch Hereforeshire	
Date 10/06/2025	Designed by PK	
File 2024-067 SW Network Des...	Checked by KAP	
Innovyze	Network 2020.1.3	

Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	-	-	100	0.025	0.025	0.025
1.001	-	-	100	0.049	0.049	0.049
2.000	-	-	100	0.140	0.140	0.140
1.002	-	-	100	0.075	0.075	0.075
1.003	-	-	100	0.075	0.075	0.075
1.004	-	-	100	0.095	0.095	0.095
3.000	-	-	100	0.025	0.025	0.025
1.005	-	-	100	0.070	0.070	0.070
4.000	-	-	100	0.100	0.100	0.100
4.001	-	-	100	0.070	0.070	0.070
1.006	-	-	100	0.000	0.000	0.000
1.007	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				0.724	0.724	0.724

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)
---------------------	--------------	--------------	--------------	------------------	----------	--------

S1.007	SExMH	121.610	121.154	0.000	0	0
--------	-------	---------	---------	-------	---	---

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	0.000
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	1	Number of Storage Structures	2
Number of Online Controls	2	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.000	Storm Duration (mins)	30
Ratio R	0.314		

Nolan Associates		Page 7
Edgbaston House Hadley Road Birmingham B16 8NH	Peterchurch Primary School Peterchurch Hereforeshire	
Date 10/06/2025	Designed by PK	
File 2024-067 SW Network Des...	Checked by KAP	
Innovyze	Network 2020.1.3	

Online Controls for Storm

Hydro-Brake® Optimum Manhole: S8, DS/PN: S1.005, Volume (m³): 7.8

Unit Reference	MD-SCU-0159-2500-0980-2500
Design Head (m)	0.980
Design Flow (l/s)	25.0
Flush-Flo™	Calculated
Objective	Linear discharge profile
Application	Surface
Sump Available	Yes
Diameter (mm)	159
Invert Level (m)	121.628
Minimum Outlet Pipe Diameter (mm)	225
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.980	25.0
Flush-Flo™	0.194	13.0
Kick-Flo®	0.239	12.8
Mean Flow over Head Range	-	16.7

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	6.3	1.200	27.5	3.000	42.8	7.000	64.6
0.200	13.0	1.400	29.7	3.500	46.1	7.500	66.8
0.300	14.3	1.600	31.6	4.000	49.2	8.000	69.0
0.400	16.3	1.800	33.5	4.500	52.1	8.500	71.0
0.500	18.1	2.000	35.2	5.000	54.9	9.000	73.0
0.600	19.8	2.200	36.9	5.500	57.5	9.500	75.0
0.800	22.7	2.400	38.4	6.000	59.9		
1.000	25.2	2.600	40.0	6.500	62.3		

Hydro-Brake® Optimum Manhole: S11, DS/PN: S1.006, Volume (m³): 7.2

Unit Reference	MD-SCU-0136-1410-0550-1410
Design Head (m)	0.550
Design Flow (l/s)	14.1
Flush-Flo™	Calculated
Objective	Linear discharge profile
Application	Surface
Sump Available	Yes
Diameter (mm)	136
Invert Level (m)	121.508
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

©1982-2020 Innovyze

Nolan Associates		Page 8																																																																								
Edgbaston House Hadley Road Birmingham B16 8NH	Peterchurch Primary School Peterchurch Hereforeshire																																																																									
Date 10/06/2025	Designed by PK																																																																									
File 2024-067 SW Network Des...	Checked by KAP																																																																									
Innovyze	Network 2020.1.3																																																																									
<u>Hydro-Brake® Optimum Manhole: S11, DS/PN: S1.006, Volume (m³): 7.2</u>																																																																										
<table><tr><td>Control Points</td><td>Head (m)</td><td>Flow (l/s)</td></tr><tr><td>Design Point (Calculated)</td><td>0.550</td><td>14.1</td></tr><tr><td>Flush-Flo™</td><td>0.166</td><td>9.0</td></tr><tr><td>Kick-Flo®</td><td>0.204</td><td>8.9</td></tr><tr><td>Mean Flow over Head Range</td><td>-</td><td>9.3</td></tr></table>			Control Points	Head (m)	Flow (l/s)	Design Point (Calculated)	0.550	14.1	Flush-Flo™	0.166	9.0	Kick-Flo®	0.204	8.9	Mean Flow over Head Range	-	9.3																																																									
Control Points	Head (m)	Flow (l/s)																																																																								
Design Point (Calculated)	0.550	14.1																																																																								
Flush-Flo™	0.166	9.0																																																																								
Kick-Flo®	0.204	8.9																																																																								
Mean Flow over Head Range	-	9.3																																																																								
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																																																																										
<table><tr><td>Depth (m)</td><td>Flow (l/s)</td><td>Depth (m)</td><td>Flow (l/s)</td><td>Depth (m)</td><td>Flow (l/s)</td><td>Depth (m)</td><td>Flow (l/s)</td></tr><tr><td>0.100</td><td>5.4</td><td>1.200</td><td>20.4</td><td>3.000</td><td>31.7</td><td>7.000</td><td>47.7</td></tr><tr><td>0.200</td><td>8.9</td><td>1.400</td><td>22.0</td><td>3.500</td><td>34.2</td><td>7.500</td><td>49.4</td></tr><tr><td>0.300</td><td>10.6</td><td>1.600</td><td>23.4</td><td>4.000</td><td>36.4</td><td>8.000</td><td>51.1</td></tr><tr><td>0.400</td><td>12.1</td><td>1.800</td><td>24.8</td><td>4.500</td><td>38.6</td><td>8.500</td><td>52.7</td></tr><tr><td>0.500</td><td>13.5</td><td>2.000</td><td>26.1</td><td>5.000</td><td>40.6</td><td>9.000</td><td>54.2</td></tr><tr><td>0.600</td><td>14.7</td><td>2.200</td><td>27.3</td><td>5.500</td><td>42.5</td><td>9.500</td><td>55.7</td></tr><tr><td>0.800</td><td>16.8</td><td>2.400</td><td>28.5</td><td>6.000</td><td>44.2</td><td></td><td></td></tr><tr><td>1.000</td><td>18.7</td><td>2.600</td><td>29.6</td><td>6.500</td><td>46.0</td><td></td><td></td></tr></table>			Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	0.100	5.4	1.200	20.4	3.000	31.7	7.000	47.7	0.200	8.9	1.400	22.0	3.500	34.2	7.500	49.4	0.300	10.6	1.600	23.4	4.000	36.4	8.000	51.1	0.400	12.1	1.800	24.8	4.500	38.6	8.500	52.7	0.500	13.5	2.000	26.1	5.000	40.6	9.000	54.2	0.600	14.7	2.200	27.3	5.500	42.5	9.500	55.7	0.800	16.8	2.400	28.5	6.000	44.2			1.000	18.7	2.600	29.6	6.500	46.0		
Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)																																																																			
0.100	5.4	1.200	20.4	3.000	31.7	7.000	47.7																																																																			
0.200	8.9	1.400	22.0	3.500	34.2	7.500	49.4																																																																			
0.300	10.6	1.600	23.4	4.000	36.4	8.000	51.1																																																																			
0.400	12.1	1.800	24.8	4.500	38.6	8.500	52.7																																																																			
0.500	13.5	2.000	26.1	5.000	40.6	9.000	54.2																																																																			
0.600	14.7	2.200	27.3	5.500	42.5	9.500	55.7																																																																			
0.800	16.8	2.400	28.5	6.000	44.2																																																																					
1.000	18.7	2.600	29.6	6.500	46.0																																																																					
©1982-2020 Innovyze																																																																										

Nolan Associates

Edgbaston House

Hadley Road

Birmingham B16 8NH

Date 10/06/2025

File 2024-067 SW Network Des...

Peterchurch Primary School

Peterchurch

Hereforeshire

Designed by PK

Checked by KAP

Innovyze

Network 2020.1.3

Page 9



5 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 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 1

Number of Storage Structures 2

Number of Online Controls 2

Number of Time/Area Diagrams 0

Number of Offline Controls 0

Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR

Ratio R 0.319

Region England and Wales Cv (Summer) 0.750

M5-60 (mm) 19.000 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, 240, 360, 480, 960, 1440

Return Period(s) (years) 5

Climate Change (%) 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S1.000	S1	15 Winter	5	+0%					122.800
S1.001	S2	15 Winter	5	+0%					122.653
S2.000	SL01	60 Winter	5	+0%					123.466
S1.002	S3	15 Winter	5	+0%					122.367
S1.003	S4	15 Winter	5	+0%					122.274
S1.004	S5	120 Winter	5	+0%	5/30 Summer				122.216
S3.000	S7	120 Winter	5	+0%	5/15 Summer				122.211
S1.005	S8	120 Winter	5	+0%	5/15 Summer				122.210
S4.000	S9	60 Winter	5	+0%	5/30 Summer				122.156
S4.001	S10	60 Winter	5	+0%	5/15 Summer				122.140
S1.006	S11	60 Winter	5	+0%	5/15 Summer				122.118
S1.007	S10	60 Winter	5	+0%					121.566

PN	US/MH Name	Depth (m)	Volume (m³)	Flow / Cap.	Flooded / Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	S1	-0.175	0.000	0.11			5.1	OK	

©1982-2020 Innovyze

Nolan Associates		Page 10
Edgbaston House Hadley Road Birmingham B16 8NH	Peterchurch Primary School Peterchurch Hereforeshire	
Date 10/06/2025 File 2024-067 SW Network Des...	Designed by PK Checked by KAP	
Innovyze	Network 2020.1.3	

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

PN	US/MH Name	Surcharged Flooded		Half Drain		Pipe		Status	Level Exceeded
		Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	Time (mins)	Flow (l/s)		
S1.001	S2	-0.143	0.000	0.28			13.5	OK	
S2.000	SL01	-0.084	0.000	0.40			10.4	OK	
S1.002	S3	-0.173	0.000	0.37			32.8	OK	
S1.003	S4	-0.141	0.000	0.54			45.1	OK	
S1.004	S5	0.073	0.000	0.14			14.9	SURCHARGED	
S3.000	S7	0.161	0.000	0.09			1.8	SURCHARGED	
S1.005	S8	0.207	0.000	0.12			13.6	SURCHARGED	
S4.000	S9	0.181	0.000	0.36			10.9	SURCHARGED	
S4.001	S10	0.298	0.000	0.30			10.3	SURCHARGED	
S1.006	S11	0.460	0.000	1.13			13.8	SURCHARGED	
S1.007	S10	-0.054	0.000	0.74			13.8	OK	