Do not scale from this drawing. Refer to figured dimensions only. RIDA Reports Ltd registered in England and Wales No. 10590566. This drawing is copyright of RIDA Reports Ltd.

Drawing Scale Bar

Drawing scale	Line length	Drawing scale	Line length
1:5	= 0.25 metres	1:200	= 10.0 metres
1:10	= 0.5 metres	1:250	= 12.5 metres
1:20	= 1.0 metres	1:500	= 25.0 metres
1:25	= 1.25 metres	1:1000	= 50.0 metres
1:50	= 2.5 metres	1:1250	= 62.5 metres
1:100	= 5.0 metres	1:2500	= 125 metres

Measure length of line above for checking of scale

GENERAL NOTES

1. All dimensions are in millimetres and levels in m AOD unless stated otherwise.
2. Do not scale. If in any doubt, consult Engineer.
3. Read in conjunction with the architects and engineers schedule drawings.
4. Check inverts and sizes of existing pipes prior to the commencement of any work. Report any discrepancies to the engineer and await instructions.
5. The location of services is shown as indicative. This drawing should be read in conjunction with the utilities drawings. No warranty to their accuracy can be given. The contractor shall take all necessary measures to satisfy himself as to the location of the existing services and connection points. Excavation should be undertaken in compliance with HSG47.
6. Concrete structures design sulphate class and ACEC concrete class unknown.
7. Pipework to be 110mm Thermoplastics U-PVC (Polypipe or similar) installed at levels marked on this drawing. Pipe bedding should be class Z in pipes within 1.5m of the building or shallower than 700mm below ground level. For all other areas the pipe bedding should be class S.
8. Joints and fittings for gravity sewers shall comply with the relevant provisions of BS EN 1401-1, BS EN 1852 and BS EN 12666-1. Pipes shall have a limit of 6% deformation. Pipes shall be SN8 ring stiffness and stamped accordingly. Pipe sections shall not be longer than 3m.
9. Plastic chambers and rings, including demarcation chambers,shall comply with BS EN 3598-1 or BS EN 13598-2 as appropriate.
10. Inspection chamber covers and frames shall comply with the relevant provisions of BS EN 124 and should be double sealed.
11. All inspection chamber covers shall be the non-ventilating type and shall have closed keyways.
12. Testing of pipelines should be as follow:

Gravity Pipework: Air pipe testing. Pipework should withstand a pressure of 100mm water gauge and this should not fall by more than 25mm in a 5minute period. However where traps or gullies are connected they should withstand a pressure of 50mm water gauge and this should not fall by more than 12mm in a 5minute period. It is recommended that pipework installations are tested in sections rather than waiting to complete in one operation.

13. Manhole covers to be set square to the building. Covers of existing manholes to be adjusted to match final ground levels.
14. Granular Bedding for pipes shall be constructed by spreading and compacting granular bedding material over the full width of the pipe trench. After the pipes have been laid, additional granular material shall, if required, be placed and compacted equally on each side of the pipes and, where practicable, this shall be done in sequence with the removal of the trench supports.

KEY:

- Permeable Surface
- Impermeable Surface/ Catchment to Soakaway 1
- Impermeable Surface/ Catchment to Soakaway 2
- Dia / Bedding Class — Proposed Surface Water Sewer
- Proposed Perforated Pipe 80mm linflex
- Linear Drainage Channel (100 wide x 150mm deep)

RWP Rainwater Pipe
IL Invert Level
CL Cover Level
ToS Top of the structure level
ILoS Invert Level of the structure

Number and F=Foul S= Surface
Type and Material
Diameter / Cover Class
Cover Level
Invert Level

Rev	Details	Date	By	Chd
P2	Pipe Slopes, IL of u/s pipes to soakaways added	11.01.22	ARD	ARD
P2	Updated Layout	17.12.21	ARD	ARD

Drawing Status: **PRELIMINARY**

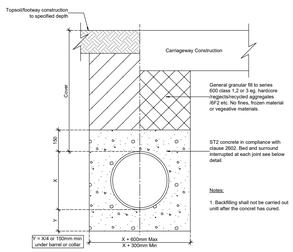
URBANWATER

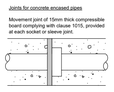
Client:

Project: **The Joyful, Steepdown Road, BN15 0LJ**

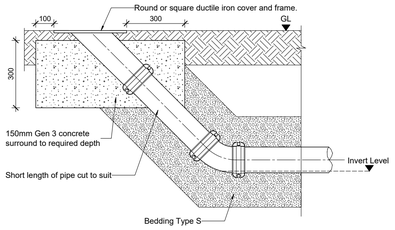
Drawing: Proposed Drainage Strategy

Print Size:	Project No:	Drawing No:	Revision:
A1	0116	003	P3

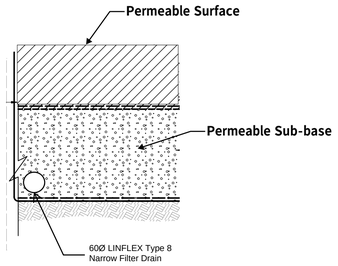




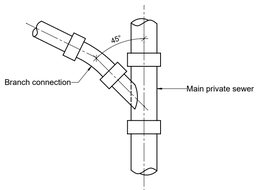
Pipe Bedding Detail Type Z



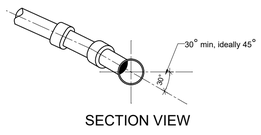
External Rodding Eye Detail



Perforated Pipe within sub-base



PLAN VIEW



SECTION VIEW

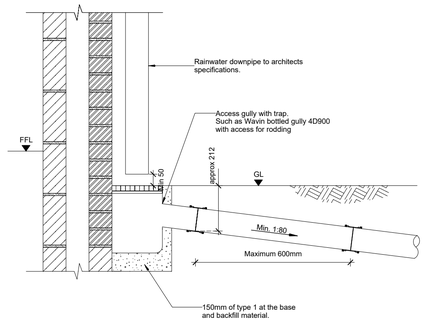
NOTES:

1. The vertical angle between the connecting pipe and the horizontal should be greater than 0° and not more than 60°.

2. Where the connection is being made to a sewer with a nominal internal diameter of 300 mm or less, connections should be made using 45° angle, or 90° angle, curved square junctions.

3. Connections made with junction fittings should be made by cutting the existing pipe, inserting the junction fitting and jointing with flexible repair couplings or slip couplers.

Lateral Connection to private sewer

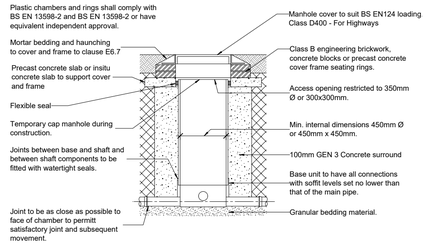


NOTES:

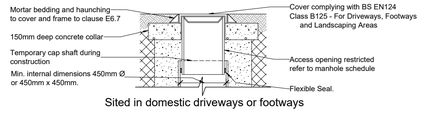
1. This details shows the standard generic arrangement.

2. The pipe and connector details will be different for each manufacturer of the components. They are to be in installed in accordance with the manufacturers recommendations.

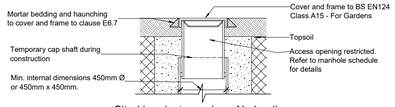
8250 - External Rainwater (High Level)



Typical Section in areas subject to vehicle loading



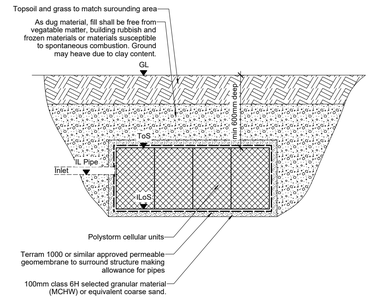
Sited in domestic driveways or footways



Sited in private garden - No loading

Notes:
1. Refer to drawing 8193 for base layouts.

- Chamber Type 3 - Flexible Material



NOTES:

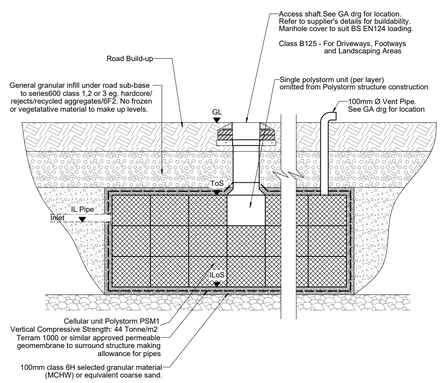
1. Permeable modular storage cell with 95% minimum void ratio. Maximum load 20 tonnes/m².

2. Installation of units as per supplier recommendations.

3. Ground may heave due to clay content in the as dug material. Contractor to level ground where required.

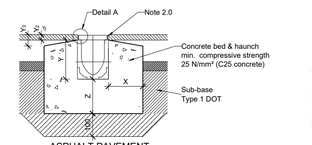
4. The area of the infiltration unit and the minimum total storage volume should be as per approved by the local planning authority documents.

Cellular Infiltration System - Landscape Area



For structure's plan dimensions, GL, ToS, ILoS, IL Pipe refer to GA drawing.

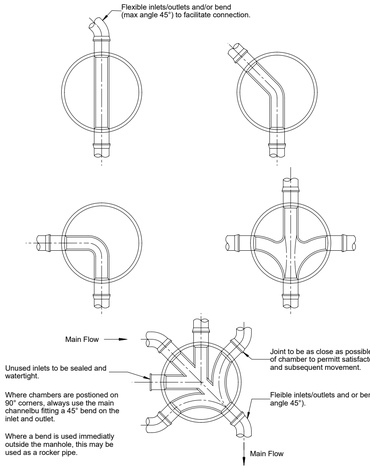
Soakaway Highway Loading



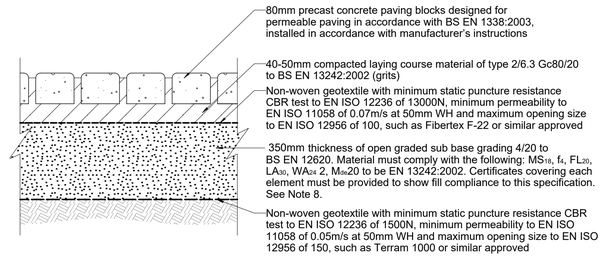
Minimum Dimensions of Concrete Surround

Load Class		A15	B125	C250	D400*	F900
Minimum Dimensions (mm)	X	100	150	150	250	300
	Y	Full Channel Height *(Less Y2 where necessary)*				
	Z	100	150	150	250	300
Maximum Dimensions (mm)	Y_1 *	35	35	35	35	35
	Y_2	100	60	60	60	35

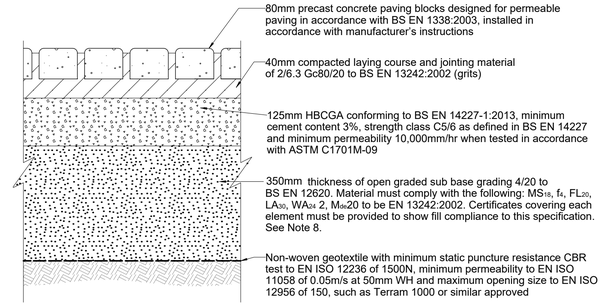
8341 - Linear Drainage Channel Detail (Steel)



Chamber Type 3 Base Layouts



Permeable Block Paving - Footpaths



It has been assumed a Design CBR of 5%. CBRs to be undertaken by contractor to confirm it. Should the CBR be lower the following 6F2 capping layer should be added.

- **2% CBR subgrade improvement layer required (may be incorporated into capping layer to provide a total layer thickness of 350 mm)**
- **2.5% CBR 300 mm capping**
- **3% CBR 225 mm capping**
- **4% CBR 150 mm capping**

Permeable Block Paving - Car Park

Chamber Type 3 Base Layouts

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Drawing Scale Bar

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1:10 =	0.5 metres	1:250 =	12.5 metres
1:20 =	1.0 metres	1:500 =	25.0 metres
1:25 =	1.25 metres	1:1000 =	50.0 metres
1:50 =	2.5 metres	1:1250 =	62.5 metres
1:100 =	5.0 metres	1:2500 =	125 metres

Measure length of line above for checking of scale

GENERAL NOTES

Rev	Details	Date	By	Chd
P4	**Chamber Type 3 Added**	**20.01.22**	**ARD**	**ARD**
P3	**Build-up added**	**11.01.22**	**ARD**	**ARD**
P2	**Updated Layout**	**17.12.21**	**ARD**	**ARD**

Drawing Status:

PRELIMINARY

URBANWATER

Client:

Project:

The Joyful, Steepdown Road, BN15 0LJ

Drawing:

Standard Details

Print Size:	Project No:	Drawing No:	Revision:
A1	**0116**	002	P4

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	2	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Inverts
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.300	Preferred Cover Depth (m)	0.500
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	8.00	Enforce best practice design rules	x

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
ParkSpaces 1/2	0.014	8.00	20.000		5.032	94.926	0.800
SO-C1			20.000	450	10.087	94.958	0.885
Soakaway 1	0.018		20.000		12.919	94.670	0.933
Dummy			20.000				

Links (Input)

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	ParkSpaces 1/2	SO-C1	5.055	0.600	19.200	19.115	0.085	59.5	100	8.08	49.5
1.001	SO-C1	Soakaway 1	2.000	0.600	19.115	19.067	0.048	41.7	100	8.11	49.4

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Detailed
FSR Region	England and Wales	Skip Steady State	x
M5-60 (mm)	20.000	Drain Down Time (mins)	240
Ratio-R	0.300	Additional Storage (m³/ha)	20.0
Summer CV	0.750	Check Discharge Rate(s)	x
Winter CV	0.840	Check Discharge Volume	x

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
10	0	0	0
10	40	0	0
30	0	0	0
30	40	0	0
100	0	0	0
100	40	0	0

Node Soakaway 1 Online Pump Control

Flap Valve	x	Invert Level (m)	19.067	Switch off depth (m)	0.001
Replaces Downstream Link	✓	Switch on depth (m)	2.000		

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Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.001	0.000	2.000	0.000

Node Soakaway 1 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	18.300
Side Inf Coefficient (m/hr)	0.97200	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	39.0	0.0	0.800	39.0	0.0	0.801	0.0	0.0

Node ParkSpaces 1/2 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.97200	Invert Level (m)	19.600	Slope (1:X)	500.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	90	Depth (m)	0.350
Safety Factor	4.0	Width (m)	14.000	Inf Depth (m)	0.350
Porosity	1.00	Length (m)	20.000		

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
2 year 15 minute summer	128.797	36.445	10 year 180 minute summer	44.990	11.577
2 year 15 minute winter	90.384	36.445	10 year 180 minute winter	29.245	11.577
2 year 30 minute summer	87.307	24.705	10 year 240 minute summer	35.975	9.507
2 year 30 minute winter	61.268	24.705	10 year 240 minute winter	23.901	9.507
2 year 60 minute summer	61.301	16.200	10 year 360 minute summer	27.947	7.192
2 year 60 minute winter	40.727	16.200	10 year 360 minute winter	18.166	7.192
2 year 120 minute summer	39.487	10.435	10 year 480 minute summer	22.300	5.893
2 year 120 minute winter	26.234	10.435	10 year 480 minute winter	14.816	5.893
2 year 180 minute summer	31.221	8.034	10 year 600 minute summer	18.452	5.047
2 year 180 minute winter	20.295	8.034	10 year 600 minute winter	12.608	5.047
2 year 240 minute summer	25.171	6.652	10 year 720 minute summer	16.587	4.446
2 year 240 minute winter	16.723	6.652	10 year 720 minute winter	11.148	4.446
2 year 360 minute summer	19.759	5.085	10 year 960 minute summer	13.811	3.637
2 year 360 minute winter	12.844	5.085	10 year 960 minute winter	9.149	3.637
2 year 480 minute summer	15.896	4.201	10 year 1440 minute summer	10.216	2.738
2 year 480 minute winter	10.561	4.201	10 year 1440 minute winter	6.866	2.738
2 year 600 minute summer	13.242	3.622	10 year +40% CC 15 minute summer	269.929	76.380
2 year 600 minute winter	9.048	3.622	10 year +40% CC 15 minute winter	189.424	76.380
2 year 720 minute summer	11.973	3.209	10 year +40% CC 30 minute summer	182.449	51.627
2 year 720 minute winter	8.047	3.209	10 year +40% CC 30 minute winter	128.035	51.627
2 year 960 minute summer	10.067	2.651	10 year +40% CC 60 minute summer	127.156	33.604
2 year 960 minute winter	6.669	2.651	10 year +40% CC 60 minute winter	84.479	33.604
2 year 1440 minute summer	7.548	2.023	10 year +40% CC 120 minute summer	80.730	21.334
2 year 1440 minute winter	5.073	2.023	10 year +40% CC 120 minute winter	53.635	21.334
10 year 15 minute summer	192.806	54.557	10 year +40% CC 180 minute summer	62.986	16.208
10 year 15 minute winter	135.303	54.557	10 year +40% CC 180 minute winter	40.943	16.208
10 year 30 minute summer	130.321	36.876	10 year +40% CC 240 minute summer	50.365	13.310
10 year 30 minute winter	91.453	36.876	10 year +40% CC 240 minute winter	33.461	13.310
10 year 60 minute summer	90.826	24.003	10 year +40% CC 360 minute summer	39.126	10.068
10 year 60 minute winter	60.342	24.003	10 year +40% CC 360 minute winter	25.433	10.068
10 year 120 minute summer	57.664	15.239	10 year +40% CC 480 minute summer	31.220	8.251
10 year 120 minute winter	38.311	15.239	10 year +40% CC 480 minute winter	20.742	8.251

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Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
10 year +40% CC 600 minute summer	25.833	7.066
10 year +40% CC 600 minute winter	17.651	7.066
10 year +40% CC 720 minute summer	23.222	6.224
10 year +40% CC 720 minute winter	15.607	6.224
10 year +40% CC 960 minute summer	19.336	5.092
10 year +40% CC 960 minute winter	12.809	5.092
10 year +40% CC 1440 minute summer	14.302	3.833
10 year +40% CC 1440 minute winter	9.612	3.833
30 year 15 minute summer	243.818	68.992
30 year 15 minute winter	171.101	68.992
30 year 30 minute summer	166.387	47.082
30 year 30 minute winter	116.763	47.082
30 year 60 minute summer	116.589	30.811
30 year 60 minute winter	77.459	30.811
30 year 120 minute summer	73.902	19.530
30 year 120 minute winter	49.099	19.530
30 year 180 minute summer	57.313	14.749
30 year 180 minute winter	37.255	14.749
30 year 240 minute summer	45.598	12.050
30 year 240 minute winter	30.295	12.050
30 year 360 minute summer	35.178	9.053
30 year 360 minute winter	22.867	9.053
30 year 480 minute summer	27.920	7.379
30 year 480 minute winter	18.550	7.379
30 year 600 minute summer	23.001	6.291
30 year 600 minute winter	15.716	6.291
30 year 720 minute summer	20.598	5.520
30 year 720 minute winter	13.843	5.520
30 year 960 minute summer	17.043	4.488
30 year 960 minute winter	11.289	4.488
30 year 1440 minute summer	12.485	3.346
30 year 1440 minute winter	8.390	3.346
30 year +40% CC 15 minute summer	341.346	96.589
30 year +40% CC 15 minute winter	239.541	96.589
30 year +40% CC 30 minute summer	232.942	65.915
30 year +40% CC 30 minute winter	163.468	65.915
30 year +40% CC 60 minute summer	163.225	43.136
30 year +40% CC 60 minute winter	108.443	43.136
30 year +40% CC 120 minute summer	103.463	27.342
30 year +40% CC 120 minute winter	68.738	27.342
30 year +40% CC 180 minute summer	80.238	20.648
30 year +40% CC 180 minute winter	52.157	20.648
30 year +40% CC 240 minute summer	63.838	16.870
30 year +40% CC 240 minute winter	42.412	16.870
30 year +40% CC 360 minute summer	49.250	12.674
30 year +40% CC 360 minute winter	32.014	12.674
30 year +40% CC 480 minute summer	39.088	10.330
30 year +40% CC 480 minute winter	25.969	10.330
30 year +40% CC 600 minute summer	32.201	8.808
30 year +40% CC 600 minute winter	22.002	8.808
30 year +40% CC 720 minute summer	28.837	7.729
30 year +40% CC 720 minute winter	19.380	7.729
30 year +40% CC 960 minute summer	23.860	6.283
30 year +40% CC 960 minute winter	15.805	6.283
30 year +40% CC 1440 minute summer	17.478	4.684
30 year +40% CC 1440 minute winter	11.747	4.684
100 year 15 minute summer	315.347	89.232
100 year 15 minute winter	221.296	89.232
100 year 30 minute summer	217.471	61.537
100 year 30 minute winter	152.611	61.537
100 year 60 minute summer	153.288	40.510
100 year 60 minute winter	101.841	40.510
100 year 120 minute summer	96.993	25.632
100 year 120 minute winter	64.440	25.632
100 year 180 minute summer	74.725	19.229
100 year 180 minute winter	48.573	19.229
100 year 240 minute summer	59.126	15.625
100 year 240 minute winter	39.282	15.625
100 year 360 minute summer	45.269	11.649
100 year 360 minute winter	29.426	11.649
100 year 480 minute summer	35.719	9.439
100 year 480 minute winter	23.731	9.439
100 year 600 minute summer	29.283	8.010
100 year 600 minute winter	20.008	8.010
100 year 720 minute summer	26.115	6.999
100 year 720 minute winter	17.551	6.999
100 year 960 minute summer	21.458	5.650
100 year 960 minute winter	14.214	5.650
100 year 1440 minute summer	15.553	4.168
100 year 1440 minute winter	10.453	4.168
100 year +40% CC 15 minute summer	441.486	124.925
100 year +40% CC 15 minute winter	309.815	124.925
100 year +40% CC 30 minute summer	304.460	86.152
100 year +40% CC 30 minute winter	213.656	86.152
100 year +40% CC 60 minute summer	214.603	56.713
100 year +40% CC 60 minute winter	142.577	56.713
100 year +40% CC 120 minute summer	135.791	35.885
100 year +40% CC 120 minute winter	90.216	35.885
100 year +40% CC 180 minute summer	104.615	26.921
100 year +40% CC 180 minute winter	68.003	26.921
100 year +40% CC 240 minute summer	82.776	21.875
100 year +40% CC 240 minute winter	54.994	21.875
100 year +40% CC 360 minute summer	63.377	16.309
100 year +40% CC 360 minute winter	41.197	16.309
100 year +40% CC 480 minute summer	50.006	13.215
100 year +40% CC 480 minute winter	33.223	13.215
100 year +40% CC 600 minute summer	40.997	11.214
100 year +40% CC 600 minute winter	28.011	11.214
100 year +40% CC 720 minute summer	36.560	9.799
100 year +40% CC 720 minute winter	24.571	9.799
100 year +40% CC 960 minute summer	30.041	7.911
100 year +40% CC 960 minute winter	19.900	7.911
100 year +40% CC 1440 minute summer	21.775	5.836
100 year +40% CC 1440 minute winter	14.634	5.836

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Results for 2 year Critical Storm Duration. Lowest mass balance: 97.01%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	ParkSpaces 1/2	12	19.234	0.034	1.8	0.0118	0.0000	OK
15 minute winter	SO-C1	12	19.146	0.031	1.8	0.0050	0.0000	OK
1440 minute winter	Soakaway 1	1230	18.577	-0.490	0.4	10.7986	0.0000	OK
	Dummy							

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	ParkSpaces 1/2	1.000	SO-C1	1.8	0.816	0.229	0.0112	
15 minute winter	ParkSpaces 1/2	Infiltration		0.0				
15 minute winter	SO-C1	1.001	Soakaway 1	1.8	0.890	0.191	0.0040	
1440 minute winter	Soakaway 1	Pump		0.0				0.0
1440 minute winter	Soakaway 1	Infiltration		0.0				

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Results for 10 year Critical Storm Duration. Lowest mass balance: 97.01%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	ParkSpaces 1/2	12	19.242	0.042	2.7	0.0147	0.0000	OK
15 minute winter	SO-C1	12	19.154	0.039	2.7	0.0062	0.0000	OK
1440 minute winter	Soakaway 1	1350	18.752	-0.315	0.5	17.6386	0.0000	OK
	Dummy							

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	ParkSpaces 1/2	1.000	SO-C1	2.7	0.904	0.344	0.0151	
15 minute winter	ParkSpaces 1/2	Infiltration		0.0				
15 minute winter	SO-C1	1.001	Soakaway 1	2.7	0.990	0.287	0.0055	
1440 minute winter	Soakaway 1	Pump		0.0				0.0
1440 minute winter	Soakaway 1	Infiltration		0.0				

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Results for 10 year +40% CC Critical Storm Duration. Lowest mass balance: 97.01%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	ParkSpaces 1/2	12	19.251	0.051	3.8	0.0180	0.0000	OK
15 minute winter	SO-C1	12	19.163	0.048	3.8	0.0076	0.0000	OK
1440 minute winter	Soakaway 1	1530	18.978	-0.089	0.7	26.4586	0.0000	OK
	Dummy							

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	ParkSpaces 1/2	1.000	SO-C1	3.8	0.981	0.484	0.0196	
15 minute winter	ParkSpaces 1/2	Infiltration		0.0				
15 minute winter	SO-C1	1.001	Soakaway 1	3.8	1.078	0.404	0.0071	
1440 minute winter	Soakaway 1	Pump		0.0				0.0
1440 minute winter	Soakaway 1	Infiltration		0.0				

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Results for 30 year Critical Storm Duration. Lowest mass balance: 97.01%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	ParkSpaces 1/2	12	19.248	0.048	3.4	0.0168	0.0000	OK
15 minute winter	SO-C1	12	19.160	0.045	3.4	0.0071	0.0000	OK
1440 minute winter	Soakaway 1	1380	18.854	-0.213	0.7	21.5986	0.0000	OK
	Dummy							

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	ParkSpaces 1/2	1.000	SO-C1	3.4	0.956	0.433	0.0180	
15 minute winter	ParkSpaces 1/2	Infiltration		0.0				
15 minute winter	SO-C1	1.001	Soakaway 1	3.4	1.049	0.361	0.0065	
1440 minute winter	Soakaway 1	Pump		0.0				0.0
1440 minute winter	Soakaway 1	Infiltration		0.0				

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Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 97.01%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	ParkSpaces 1/2	12	19.259	0.059	4.8	0.0208	0.0000	OK
15 minute winter	SO-C1	12	19.170	0.055	4.8	0.0088	0.0000	OK
1440 minute winter	Soakaway 1	1590	19.145	0.078	0.9	31.2498	0.0000	OK
	Dummy							

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	ParkSpaces 1/2	1.000	SO-C1	4.8	1.033	0.611	0.0235	
15 minute winter	ParkSpaces 1/2	Infiltration		0.0				
15 minute winter	SO-C1	1.001	Soakaway 1	4.8	1.139	0.510	0.0084	
1440 minute winter	Soakaway 1	Pump		0.0				0.0
1440 minute winter	Soakaway 1	Infiltration		0.0				

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Results for 100 year Critical Storm Duration. Lowest mass balance: 97.01%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	ParkSpaces 1/2	12	19.256	0.056	4.4	0.0197	0.0000	OK
15 minute winter	SO-C1	12	19.167	0.052	4.4	0.0083	0.0000	OK
1440 minute winter	Soakaway 1	1530	19.011	-0.056	0.7	27.7185	0.0000	OK
	Dummy							

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	ParkSpaces 1/2	1.000	SO-C1	4.4	1.013	0.560	0.0220	
15 minute winter	ParkSpaces 1/2	Infiltration		0.0				
15 minute winter	SO-C1	1.001	Soakaway 1	4.4	1.116	0.468	0.0079	
1440 minute winter	Soakaway 1	Pump		0.0				0.0
1440 minute winter	Soakaway 1	Infiltration		0.0				

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Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 97.01%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute winter	ParkSpaces 1/2	1020	19.601	0.401	0.5	0.1447	0.0000	SURCHARGED
1440 minute winter	SO-C1	1050	19.601	0.486	0.5	0.0773	0.0000	SURCHARGED
1440 minute winter	Soakaway 1	1050	19.601	0.534	1.1	31.4259	0.0000	OK
	Dummy							

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute winter	ParkSpaces 1/2	1.000	SO-C1	0.5	0.576	0.064	0.0396	
1440 minute winter	ParkSpaces 1/2	Infiltration		0.4				
1440 minute winter	SO-C1	1.001	Soakaway 1	0.5	0.624	0.053	0.0156	
1440 minute winter	Soakaway 1	Pump		0.0				0.0
1440 minute winter	Soakaway 1	Infiltration		0.0				

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Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	2	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Inverts
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.300	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	8.00	Enforce best practice design rules	✓

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S01	0.008	8.00	19.700		-11.661	91.762	1.300
S02			19.700	450	30.361	91.554	1.579
S04	0.008	8.00	19.700		-11.870	68.509	1.300
S03			19.400	450	42.040	70.386	1.463
S08	0.006	8.00	18.450	450	82.291	100.209	1.300
S05			18.050	450	79.267	70.594	1.327
S06			18.050	600	78.745	43.274	1.496
S07	0.003	8.00	17.200	450	112.113	42.649	0.776
S09	0.003	8.00	18.450	450	119.978	77.534	1.300
S10			18.150	450	144.692	77.999	1.190
Soakaway			17.000		146.420	43.379	1.500
Outfal			17.000	450	174.783	42.336	1.669

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	S01	S02	16.600	0.600	18.400	18.121	0.279	59.5	100	8.28	49.0
1.001	S02	S03	10.900	0.600	18.121	17.937	0.184	59.2	100	8.46	48.5
2.000	S04	S03	16.600	0.600	18.400	17.937	0.463	35.9	100	8.21	49.1
1.002	S03	S05	10.700	0.600	17.937	17.757	0.180	59.4	100	8.64	48.0
3.000	S08	S05	25.400	0.600	17.150	16.723	0.427	59.5	100	8.42	48.6
1.003	S05	S06	10.000	0.600	16.723	16.554	0.169	59.2	100	8.80	47.6
1.004	S06	S07	7.700	0.600	16.554	16.424	0.130	59.2	150	8.90	47.3
1.005	S07	Soakaway	3.800	0.600	16.424	15.500	0.924	4.1	150	8.91	47.3
4.000	S09	S10	11.300	0.600	17.150	16.960	0.190	59.5	100	8.19	49.2
4.001	S10	Soakaway	6.600	0.600	16.960	15.500	1.460	4.5	100	8.22	49.1

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	1.000	7.9	1.1	1.200	1.479	0.008	0.0	25	0.692
1.001	1.002	7.9	1.1	1.479	1.363	0.008	0.0	25	0.694
2.000	1.292	10.1	1.1	1.200	1.363	0.008	0.0	22	0.844
1.002	1.001	7.9	2.1	1.363	0.193	0.016	0.0	35	0.840
3.000	1.000	7.9	0.8	1.200	1.227	0.006	0.0	21	0.638
1.003	1.003	7.9	2.8	1.227	1.396	0.022	0.0	42	0.925
1.004	1.309	23.1	2.8	1.346	0.626	0.022	0.0	35	0.891
1.005	5.004	88.4	3.2	0.626	1.350	0.025	0.0	20	2.388
4.000	1.000	7.9	0.4	1.200	1.090	0.003	0.0	15	0.515
4.001	3.662	28.8	0.4	1.090	1.400	0.003	0.0	8	1.263

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Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.006	Soakaway	Outfal	10.000	0.600	15.500	15.331	0.169	59.2	150	9.04	47.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.006	1.310	23.1	3.6	1.350	1.519	0.028	0.0	40	0.949

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Normal
FSR Region	England and Wales	Skip Steady State	x
M5-60 (mm)	20.000	Drain Down Time (mins)	240
Ratio-R	0.300	Additional Storage (m³/ha)	20.0
Summer CV	0.750	Check Discharge Rate(s)	x
Winter CV	0.840	Check Discharge Volume	x

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
10	0	0	0
10	40	0	0
30	0	0	0
30	40	0	0
100	0	0	0
100	40	0	0

Node Soakaway Online Pump Control

Flap Valve	x	Replaces Downstream Link	✓	Switch on depth (m)	2.000
Downstream Link	1.006	Invert Level (m)	15.500	Switch off depth (m)	0.001

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.001	0.000	2.000	0.000

Node Soakaway Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	4.0	Invert Level (m)	15.300
Side Inf Coefficient (m/hr)	0.14760	Porosity	0.95	Time to half empty (mins)	0

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	50.0	0.0	0.800	50.0	0.0	0.801	0.0	0.0

Node S01 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.14760	Invert Level (m)	19.300	Slope (1:X)	500.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	3.0	Width (m)	7.500	Inf Depth (m)	0.350
Porosity	0.30	Length (m)	10.000		

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Node S04 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.14760	Invert Level (m)	19.300	Slope (1:X)	500.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	3.0	Width (m)	7.500	Inf Depth (m)	0.350
Porosity	0.30	Length (m)	10.000		

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Results for 2 year Critical Storm Duration. Lowest mass balance: 99.68%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S01	11	18.424	0.024	1.0	0.0030	0.0000	OK
15 minute winter	S02	13	18.145	0.024	1.0	0.0038	0.0000	OK
15 minute winter	S04	12	18.421	0.021	1.0	0.0026	0.0000	OK
15 minute winter	S03	13	17.972	0.035	2.0	0.0056	0.0000	OK
15 minute winter	S08	12	17.172	0.022	0.8	0.0054	0.0000	OK
15 minute winter	S05	12	16.766	0.043	2.8	0.0068	0.0000	OK
15 minute winter	S06	13	16.593	0.039	2.8	0.0111	0.0000	OK
15 minute winter	S07	13	16.444	0.020	3.2	0.0047	0.0000	OK
15 minute winter	S09	13	17.167	0.017	0.4	0.0035	0.0000	OK
15 minute winter	S10	13	16.968	0.008	0.4	0.0013	0.0000	OK
1440 minute winter	Soakaway	1080	15.444	-0.056	0.3	6.8353	0.0000	OK
15 minute summer	Outfal	1	15.331	0.000	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	S01	1.000	S02	1.0	0.689	0.128	0.0242	
15 minute winter	S01	Infiltration		0.0				
15 minute winter	S02	1.001	S03	1.0	0.516	0.127	0.0214	
15 minute winter	S04	2.000	S03	1.0	0.595	0.099	0.0307	
15 minute winter	S04	Infiltration		0.0				
15 minute winter	S03	1.002	S05	2.0	0.821	0.254	0.0260	
15 minute winter	S08	3.000	S05	0.8	0.456	0.101	0.0563	
15 minute winter	S05	1.003	S06	2.8	0.915	0.351	0.0303	
15 minute winter	S06	1.004	S07	2.8	1.127	0.120	0.0195	
15 minute winter	S07	1.005	Soakaway	3.2	2.337	0.036	0.0052	
15 minute winter	S09	4.000	S10	0.4	0.692	0.051	0.0068	
15 minute winter	S10	4.001	Soakaway	0.4	1.293	0.014	0.0020	
1440 minute winter	Soakaway	Pump	Outfal	0.0				0.0
1440 minute winter	Soakaway	Infiltration		0.0				

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Results for 10 year Critical Storm Duration. Lowest mass balance: 99.68%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S01	12	18.431	0.031	1.6	0.0038	0.0000	OK
15 minute winter	S02	12	18.152	0.031	1.6	0.0049	0.0000	OK
15 minute winter	S04	12	18.427	0.027	1.6	0.0033	0.0000	OK
15 minute winter	S03	12	17.983	0.046	3.2	0.0073	0.0000	OK
15 minute winter	S08	12	17.176	0.026	1.2	0.0066	0.0000	OK
15 minute winter	S05	13	16.779	0.056	4.4	0.0089	0.0000	OK
15 minute winter	S06	13	16.604	0.050	4.3	0.0141	0.0000	OK
15 minute winter	S07	13	16.449	0.025	4.9	0.0059	0.0000	OK
15 minute winter	S09	12	17.171	0.021	0.6	0.0043	0.0000	OK
15 minute winter	S10	13	16.970	0.010	0.6	0.0016	0.0000	OK
960 minute winter	Soakaway	915	15.527	0.027	0.7	10.7875	0.0000	OK
15 minute summer	Outfal	1	15.331	0.000	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	S01	1.000	S02	1.6	0.784	0.204	0.0339	
15 minute winter	S01	Infiltration		0.0				
15 minute winter	S02	1.001	S03	1.6	0.579	0.202	0.0301	
15 minute winter	S04	2.000	S03	1.6	0.644	0.158	0.0432	
15 minute winter	S04	Infiltration		0.0				
15 minute winter	S03	1.002	S05	3.2	0.924	0.402	0.0366	
15 minute winter	S08	3.000	S05	1.2	0.498	0.152	0.0782	
15 minute winter	S05	1.003	S06	4.3	1.030	0.550	0.0420	
15 minute winter	S06	1.004	S07	4.3	1.272	0.188	0.0270	
15 minute winter	S07	1.005	Soakaway	4.9	2.653	0.056	0.0071	
15 minute winter	S09	4.000	S10	0.6	0.780	0.076	0.0090	
15 minute winter	S10	4.001	Soakaway	0.6	1.460	0.021	0.0027	
960 minute winter	Soakaway	Pump	Outfal	0.0				0.0
960 minute winter	Soakaway	Infiltration		0.0				

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Results for 10 year +40% CC Critical Storm Duration. Lowest mass balance: 99.68%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S01	12	18.437	0.037	2.2	0.0045	0.0000	OK
15 minute winter	S02	12	18.157	0.036	2.2	0.0057	0.0000	OK
15 minute winter	S04	12	18.432	0.032	2.2	0.0039	0.0000	OK
15 minute winter	S03	12	17.993	0.056	4.4	0.0089	0.0000	OK
15 minute winter	S08	13	17.181	0.031	1.6	0.0077	0.0000	OK
15 minute winter	S05	13	16.793	0.070	6.0	0.0111	0.0000	OK
15 minute winter	S06	13	16.613	0.059	6.0	0.0167	0.0000	OK
15 minute winter	S07	13	16.453	0.029	6.8	0.0069	0.0000	OK
15 minute winter	S09	12	17.174	0.024	0.8	0.0049	0.0000	OK
15 minute winter	S10	13	16.972	0.012	0.8	0.0019	0.0000	OK
1440 minute winter	Soakaway	1290	15.658	0.158	0.7	17.0265	0.0000	SURCHARGED
15 minute summer	Outfal	1	15.331	0.000	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	S01	1.000	S02	2.2	0.856	0.280	0.0427	
15 minute winter	S01	Infiltration		0.0				
15 minute winter	S02	1.001	S03	2.2	0.624	0.279	0.0385	
15 minute winter	S04	2.000	S03	2.2	0.687	0.217	0.0551	
15 minute winter	S04	Infiltration		0.0				
15 minute winter	S03	1.002	S05	4.4	0.998	0.555	0.0468	
15 minute winter	S08	3.000	S05	1.6	0.519	0.204	0.1003	
15 minute winter	S05	1.003	S06	6.0	1.115	0.757	0.0534	
15 minute winter	S06	1.004	S07	6.0	1.382	0.258	0.0340	
15 minute winter	S07	1.005	Soakaway	6.8	2.899	0.077	0.0089	
15 minute winter	S09	4.000	S10	0.8	0.846	0.102	0.0111	
15 minute winter	S10	4.001	Soakaway	0.8	1.591	0.028	0.0033	
1440 minute winter	Soakaway	Pump	Outfal	0.0				0.0
1440 minute winter	Soakaway	Infiltration		0.0				

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Results for 30 year Critical Storm Duration. Lowest mass balance: 99.68%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S01	12	18.435	0.035	2.0	0.0043	0.0000	OK
15 minute winter	S02	12	18.155	0.034	2.0	0.0055	0.0000	OK
15 minute winter	S04	12	18.430	0.030	2.0	0.0037	0.0000	OK
15 minute winter	S03	12	17.990	0.053	4.0	0.0084	0.0000	OK
15 minute winter	S08	12	17.180	0.030	1.5	0.0074	0.0000	OK
15 minute winter	S05	13	16.788	0.065	5.5	0.0104	0.0000	OK
15 minute winter	S06	13	16.610	0.056	5.4	0.0159	0.0000	OK
15 minute winter	S07	13	16.452	0.028	6.1	0.0066	0.0000	OK
15 minute winter	S09	12	17.173	0.023	0.7	0.0046	0.0000	OK
15 minute winter	S10	13	16.971	0.011	0.7	0.0017	0.0000	OK
600 minute winter	Soakaway	780	15.606	0.106	1.0	14.5267	0.0000	OK
15 minute summer	Outfal	1	15.331	0.000	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	S01	1.000	S02	2.0	0.834	0.255	0.0398	
15 minute winter	S01	Infiltration		0.0				
15 minute winter	S02	1.001	S03	2.0	0.611	0.254	0.0357	
15 minute winter	S04	2.000	S03	2.0	0.684	0.197	0.0512	
15 minute winter	S04	Infiltration		0.0				
15 minute winter	S03	1.002	S05	4.0	0.976	0.504	0.0434	
15 minute winter	S08	3.000	S05	1.5	0.483	0.191	0.0933	
15 minute winter	S05	1.003	S06	5.4	1.091	0.689	0.0497	
15 minute winter	S06	1.004	S07	5.4	1.351	0.235	0.0318	
15 minute winter	S07	1.005	Soakaway	6.1	2.821	0.070	0.0083	
15 minute winter	S09	4.000	S10	0.7	0.814	0.089	0.0101	
15 minute winter	S10	4.001	Soakaway	0.7	1.529	0.024	0.0030	
600 minute winter	Soakaway	Pump	Outfal	0.0				0.0
600 minute winter	Soakaway	Infiltration		0.0				

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Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.68%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S01	12	18.441	0.041	2.7	0.0050	0.0000	OK
15 minute winter	S02	12	18.161	0.040	2.7	0.0064	0.0000	OK
15 minute winter	S04	12	18.435	0.035	2.7	0.0043	0.0000	OK
15 minute winter	S03	12	18.001	0.064	5.4	0.0102	0.0000	OK
15 minute winter	S08	12	17.185	0.035	2.1	0.0089	0.0000	OK
15 minute winter	S05	13	16.809	0.086	7.5	0.0136	0.0000	OK
15 minute winter	S06	13	16.621	0.067	7.4	0.0189	0.0000	OK
15 minute winter	S07	13	16.457	0.033	8.4	0.0077	0.0000	OK
15 minute winter	S09	12	17.177	0.027	1.0	0.0055	0.0000	OK
15 minute winter	S10	13	16.973	0.013	1.0	0.0021	0.0000	OK
960 minute winter	Soakaway	1110	15.783	0.283	1.0	22.9292	0.0000	SURCHARGED
15 minute summer	Outfal	1	15.331	0.000	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	S01	1.000	S02	2.7	0.904	0.344	0.0496	
15 minute winter	S01	Infiltration		0.0				
15 minute winter	S02	1.001	S03	2.7	0.651	0.343	0.0451	
15 minute winter	S04	2.000	S03	2.7	0.719	0.266	0.0646	
15 minute winter	S04	Infiltration		0.0				
15 minute winter	S03	1.002	S05	5.4	1.043	0.683	0.0550	
15 minute winter	S08	3.000	S05	2.1	0.485	0.267	0.1214	
15 minute winter	S05	1.003	S06	7.4	1.161	0.943	0.0634	
15 minute winter	S06	1.004	S07	7.4	1.459	0.321	0.0400	
15 minute winter	S07	1.005	Soakaway	8.4	3.084	0.095	0.0104	
15 minute winter	S09	4.000	S10	1.0	0.901	0.127	0.0130	
15 minute winter	S10	4.001	Soakaway	1.0	1.702	0.035	0.0039	
960 minute winter	Soakaway	Pump	Outfal	0.0				0.0
960 minute winter	Soakaway	Infiltration		0.0				

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Results for 100 year Critical Storm Duration. Lowest mass balance: 99.68%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S01	12	18.439	0.039	2.5	0.0048	0.0000	OK
15 minute winter	S02	12	18.160	0.039	2.5	0.0062	0.0000	OK
15 minute winter	S04	12	18.434	0.034	2.5	0.0042	0.0000	OK
15 minute winter	S03	12	17.998	0.061	5.0	0.0097	0.0000	OK
15 minute winter	S08	12	17.184	0.034	1.9	0.0084	0.0000	OK
15 minute winter	S05	13	16.801	0.078	6.9	0.0125	0.0000	OK
15 minute winter	S06	13	16.618	0.064	6.8	0.0180	0.0000	OK
15 minute winter	S07	13	16.455	0.031	7.7	0.0074	0.0000	OK
15 minute winter	S09	12	17.177	0.027	1.0	0.0055	0.0000	OK
15 minute winter	S10	12	16.973	0.013	1.0	0.0021	0.0000	OK
600 minute winter	Soakaway	795	15.692	0.192	1.3	18.6370	0.0000	SURCHARGED
15 minute summer	Outfal	1	15.331	0.000	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	S01	1.000	S02	2.5	0.886	0.318	0.0469	
15 minute winter	S01	Infiltration		0.0				
15 minute winter	S02	1.001	S03	2.5	0.641	0.317	0.0425	
15 minute winter	S04	2.000	S03	2.5	0.732	0.246	0.0608	
15 minute winter	S04	Infiltration		0.0				
15 minute winter	S03	1.002	S05	5.0	1.027	0.632	0.0517	
15 minute winter	S08	3.000	S05	1.9	0.560	0.242	0.1126	
15 minute winter	S05	1.003	S06	6.8	1.147	0.867	0.0593	
15 minute winter	S06	1.004	S07	6.8	1.430	0.296	0.0376	
15 minute winter	S07	1.005	Soakaway	7.7	3.012	0.088	0.0098	
15 minute winter	S09	4.000	S10	1.0	0.901	0.127	0.0130	
15 minute winter	S10	4.001	Soakaway	1.0	1.701	0.035	0.0039	
600 minute winter	Soakaway	Pump	Outfal	0.0				0.0
600 minute winter	Soakaway	Infiltration		0.0				

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Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.68%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S01	12	18.447	0.047	3.5	0.0058	0.0000	OK
15 minute winter	S02	12	18.168	0.047	3.5	0.0074	0.0000	OK
15 minute winter	S04	12	18.441	0.041	3.5	0.0050	0.0000	OK
15 minute winter	S03	12	18.016	0.079	7.0	0.0126	0.0000	OK
15 minute winter	S08	12	17.190	0.040	2.7	0.0102	0.0000	OK
15 minute winter	S05	14	16.930	0.207	9.7	0.0329	0.0000	SURCHARGED
15 minute winter	S06	14	16.630	0.076	9.2	0.0214	0.0000	OK
15 minute winter	S07	14	16.461	0.037	10.4	0.0086	0.0000	OK
15 minute winter	S09	12	17.181	0.031	1.3	0.0063	0.0000	OK
15 minute winter	S10	12	16.975	0.015	1.3	0.0023	0.0000	OK
1440 minute winter	Soakaway	1410	15.911	0.411	1.0	29.0102	0.0000	SURCHARGED
15 minute summer	Outfal	1	15.331	0.000	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	S01	1.000	S02	3.5	0.967	0.446	0.0601	
15 minute winter	S01	Infiltration		0.0				
15 minute winter	S02	1.001	S03	3.5	0.683	0.444	0.0558	
15 minute winter	S04	2.000	S03	3.5	0.761	0.345	0.0799	
15 minute winter	S04	Infiltration		0.0				
15 minute winter	S03	1.002	S05	7.0	1.088	0.884	0.0684	
15 minute winter	S08	3.000	S05	2.7	0.512	0.344	0.1370	
15 minute winter	S05	1.003	S06	9.2	1.219	1.173	0.0709	
15 minute winter	S06	1.004	S07	9.2	1.538	0.400	0.0471	
15 minute winter	S07	1.005	Soakaway	10.5	3.270	0.118	0.0121	
15 minute winter	S09	4.000	S10	1.3	0.969	0.165	0.0156	
15 minute winter	S10	4.001	Soakaway	1.3	1.841	0.045	0.0047	
1440 minute winter	Soakaway	Pump	Outfal	0.0				0.0
1440 minute winter	Soakaway	Infiltration		0.0				

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Approval Settings

Node Size	x	Coordinates	x	Full Bore Velocity	x	Time to Half Empty	✓
Node Losses	x	Crossings	x	Proportional Velocity	x	Return Period (years)	10
Link Size	x	Cover Depth	x	Surcharged Depth	x	Discharge Rates	x
Link Length	x	Backdrops	x	Flooding	x	Discharge Volume	x

Approval Results

The network has been designed for a 1 in 2 year storm using FSR rainfall
It contains 12 nodes (1 outfall) and 11 links
The total impermeable area is 0.028 ha
1 online control has been defined
3 structures have been defined, providing 42m³ of storage below the flood risk level
Infiltration based on BRE 365 has been applied at 3 of the structures
Simulations have been completed using FSR summer and winter storms from 15 to 1440 minute duration

The node size test has not been completed

The node losses test has not been completed

The link size test has not been completed

The link length test has not been completed

The coordinates test has not been completed

The crossings test has not been completed

The cover depth test has not been completed

The backdrops test has not been completed

The full bore velocity test has not been completed

The proportional velocity test has not been completed

The surcharged depth test has not been completed

The flooding test has not been completed

No infiltrating structures failed to half empty in 1440 minutes during the 10 year return period
This half emptying time includes the 1:10 +40% climate change

The discharge rate test has not been completed

The discharge volume test has not been completed

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