RSPD

Roads & Sewers for Planning & Design

Drainage & SUDs Strategy
In support of Residential Development at

80 Brook Way
Lancing
West Sussex
BN15 8DH

Luke Shaw
March 2023
Revision [0]
Job No: 5734

RSPD
Roads & Sewers for Planning & Design

80 Brook Way
Lancing
West Sussex, BN15 8DH

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Amendments

Revision	Date	Description
0	March 2023	Planning Issue

References

Reference	Title
A	CIRIA Publication 753 – The SUDS Manual (2015)
B	Sewers for Adoption 7th Edition (Wrc 2012)
C	Part H of the Building Regulations (2015)
D	Planning Practice Guidance (2016)
E	West Sussex County Council Drainage & SUDS Policy

Introduction

This Drainage Strategy has been developed in support of a planning application for the construction of 1 new residential dwelling, located at 80 Brook Way, Lancing, West Sussex, BN15 8DH. This document aims to outline the methods of drainage available for the Surface Water Drainage. A Location Plan and layout of the proposed scheme can be found in the appendices of this document.

Development Description and Location

The development proposal is for the construction of 1 new residential dwelling, situated at 80 Brook Way, Lancing, BN15 8DH.

The location of the proposed site is at grid reference 518669, 104374 as shown in the location plans in the appendices.

Existing Drainage

The public sewer records have been checked and it can be confirmed that a 150mm public foul sewer runs adjacent to the development on the opposite side of Brook Way. Asset plans do not denote a highway surface water sewer, however, a review of google maps suggests this to be the case, this will need to be confirmed on site.

Site Geology

The site is underlain by the New Haven Chalk which is covered by a layer of Head Deposits consisting of Clay, Silt and Sand. The New Haven Chalk is typically described by the British Geological Survey as composed of soft to medium hard, smooth white chalks with numerous marl seams and flint bands, including abundant Zoophycos flints (notably at levels near the base). The formation is known to contain distinct phosphatic chalks of limited lateral extent. Equivalent beds, the Margate Chalk of north Kent, are marl-free and contain little flint.

Borehole and soakage data are contained in the appendices.

Topography

At the time of writing this report a Topographical survey of this site has not been undertaken. It is proposed that this is completed prior to construction, levels for the drainage will then be made relative to local ordinance datum.

Ground Water

Local borehole records have been reviewed for the site, which suggests that groundwater rests 2.93m below ground level. However, additional bore hole testing on the site has been undertaken which shows the band of the heads deposits are around 3m deep before chalk is encountered. A soakaway would therefore not be able to achieve the appropriate freeboard above groundwater levels.

Furthermore, infiltration testing was undertaken in the first 2m of ground which confirmed non-compliant BRE 365 testing.

Design Objective

The objective of the design will be to;

a) Retain/reduce the quantity of surface water runoff leaving the development area, to equal or less than the greenfield runoff rate for all storms, up to and including the 1 in 100-year return period + 40% climate change.
b) Improve the quality of surface water runoff by infiltration methods and open SUD's wherever possible.

Development Drainage Proposals

Surface Water Drainage

The proposed development drainage will not be offered for adoption to any of the statutory authorities, however, the surface water calculations for the proposed development will be in accordance with the requirements set out in the West Sussex Drainage and Planning Policy document. The calculations have been included within the appendices found at the end of this document.

The total area of impermeable surfaces for the new development totals 58m^2, this has been factored into the Surface Water calculations which can be found in the appendices at the end of this report.

As mentioned previously, the band of head deposits are around 3m deep before chalk is encountered. A soakaway would therefore not be able achieve the appropriate freeboard above the groundwater levels. Therefore, proposals have been made for the Surface Water to discharge into the Highway Surface Water Sewer.

The rainwater from the roof areas will be drained via conventional downpipes which connect to the plot drainage network, before being discharged into the assumed Highway Surface Water sewer that runs along Brook Way, at the prescribed rate of 0.5l/s. As mentioned previously this asset will need to be confirmed on site.

A series of attenuation crates have also been proposed beneath the private driveway to attenuate stormwater in the higher-intensity rainfall events. The exact sizing of the attenuation crates can be reviewed on the site drainage layout.

Linear drainage has been proposed along the front of the private driveway, this will allow any surface water that accumulates on the private driveway to be collected and distributed into the main surface water network.

Calculations for a comprehensive range of storms has been undertaken with Causeway Flow Software, up to and including the 1 in 100-year event + 40% climate change. The results showed there was no flooding anywhere in the system and the proposed methods would be suitable for retaining and discharging the storm water, in accordance with the hierarchy of SUDS.

Water Quality

Part of the design process is to consider all aspects of water quality to ensure the appropriate levels of treatment are being implemented and that there are no adverse effects occurring to off-site areas.

When considering potential sources of pollution and their respective methods of treatment and mitigation, the CIRIA SuDS Manual 2015 (C753) provides guidance on how this can be assessed and mitigated appropriately.

The following tables are provided to ensure and check that the design methodology and treatment systems have been considered to adequately mitigate against the pollution hazard.

Total SuDS Mitigation Index (for each contamination type)	≥	Pollution Hazard Index (for each contaminant type)

TABLE 26.2 Pollution hazard indices for different land use classifications

Land use	Pollution hazard level	Total suspended solids (TSS)	Metals	Hydro-carbons
Residential roofs	Very low	0.2	0.2	0.05
Other roofs (typically commercial/ industrial roofs)	Low	0.3	0.2 (up to 0.8 where there is potential for metals to leach from the roof)	0.05
Individual property driveways, residential car parks, low traffic roads (eg cul de sacs, homezones and general access roads) and non-residential car parking with infrequent change (eg schools, offices) ie < 300 traffic movements/day	Low	0.5	0.4	0.4
Commercial yard and delivery areas, non-residential car parking with frequent change (eg hospitals, retail), all roads except low traffic roads and trunk roads/motorways[1]	Medium	0.7	0.6	0.7
Sites with heavy pollution (eg haulage yards, lorry parks, highly frequented lorry approaches to industrial estates, waste sites), sites where chemicals and fuels (other than domestic fuel oil) are to be delivered, handled, stored, used or manufactured; industrial sites; trunk roads and motorways[1]	High	0.8[2]	0.8[2]	0.9[2]

For the site at Brook Way, the consideration will be for the dwelling roof and private driveway area. The roof areas of the main house are considered a 'very low hazard', with the individual property driveways representing a 'low hazard'.

TABLE 26.3 Indicative SuDS mitigation indices for discharges to surface waters

	Mitigation indices[1]		
Type of SuDS component	**TSS**	**Metals**	**Hydrocarbons**
Filter strip	0.4	0.4	0.5
Filter drain	0.4[2]	0.4	0.4
Swale	0.5	0.6	0.6
Bioretention system	0.8	0.8	0.8
Permeable pavement	0.7	0.6	0.7
Detention basin	0.5	0.5	0.6
Pond[4]	0.7[3]	0.7	0.5
Wetland	0.8[3]	0.8	0.8
Proprietary treatment systems[5,6]	These must demonstrate that they can address each of the contaminant types to acceptable levels for frequent events up to approximately the 1 in 1 year return period event, for inflow concentrations relevant to the contributing drainage area.		

By using an inspection chamber with an Orifice plate and Sump to collect any silt build up within the system, this should be deemed appropriate mitigation for the SUDS Design.

Residual Flood Risk

Surface water flood maps have been checked which show there are no overland flows that are affecting the site. The site is also in an EA flood zone 1, therefore not at risk of flooding.

Future Maintenance

Maintenance regimes of the various drainage methods will vary, depending on the development proposals and surroundings. However, a general guide to the maintenance of the various methods of drainage have been provided below.

Maintenance of Gullies, Linear Drainage Channels and Catch pits

To ensure the long-term effectiveness of the surface water collection asset, the sediment that accumulates within the sump of the conventional gully pot, Linear Drain or catch pit must periodically be removed to prevent it from entering the rest of the network. The frequency of this maintenance operation will vary depending on the density of the site, vegetation, design of the drainage system, other permeable areas and if the site is pre or post construction.

The ongoing maintenance activities for this system are tabulated below in Table 1.

Table 1 – Gully and Catch Pit Maintenance – By the property owner.

Maintenance Activity	Remedial Action	Inspection Frequency	
Inspect Linear Drainage Grating.	Ensure the grating had not been covered with silage, mud or any other detritus, to ensure the ongoing effectiveness of the collecting grill. Sweep clear as necessary Also check the condition of the grating to ensure there are no damaged components. Replace as required.	Pre-completion	Monthly
		Post completion – up to 1 year	Quarterly
		On-going	Annually
Inspect Gullies, Sumps and Catch-pits	Clear any sediment or detritus found in the chamber/s. If sediment has built up within the pipe network, this should be cleared with rodding equipment or professional jetting techniques.	Pre-completion	Monthly
		Post completion – up to 1 year	Quarterly
		On-going	Annually

Maintenance of Attenuation Crates

The property owners will need to check and empty the proceeding chamber, if necessary, on a quarterly basis initially. This will ensure that the attenuation crates can be utilised to their capacity, as a blockage would reduce the overall storage area of the crates.

The property owner should ensure to follow any maintenance procedures in the Polypipe Technical and data sheets which have been included within the appendices of this document.

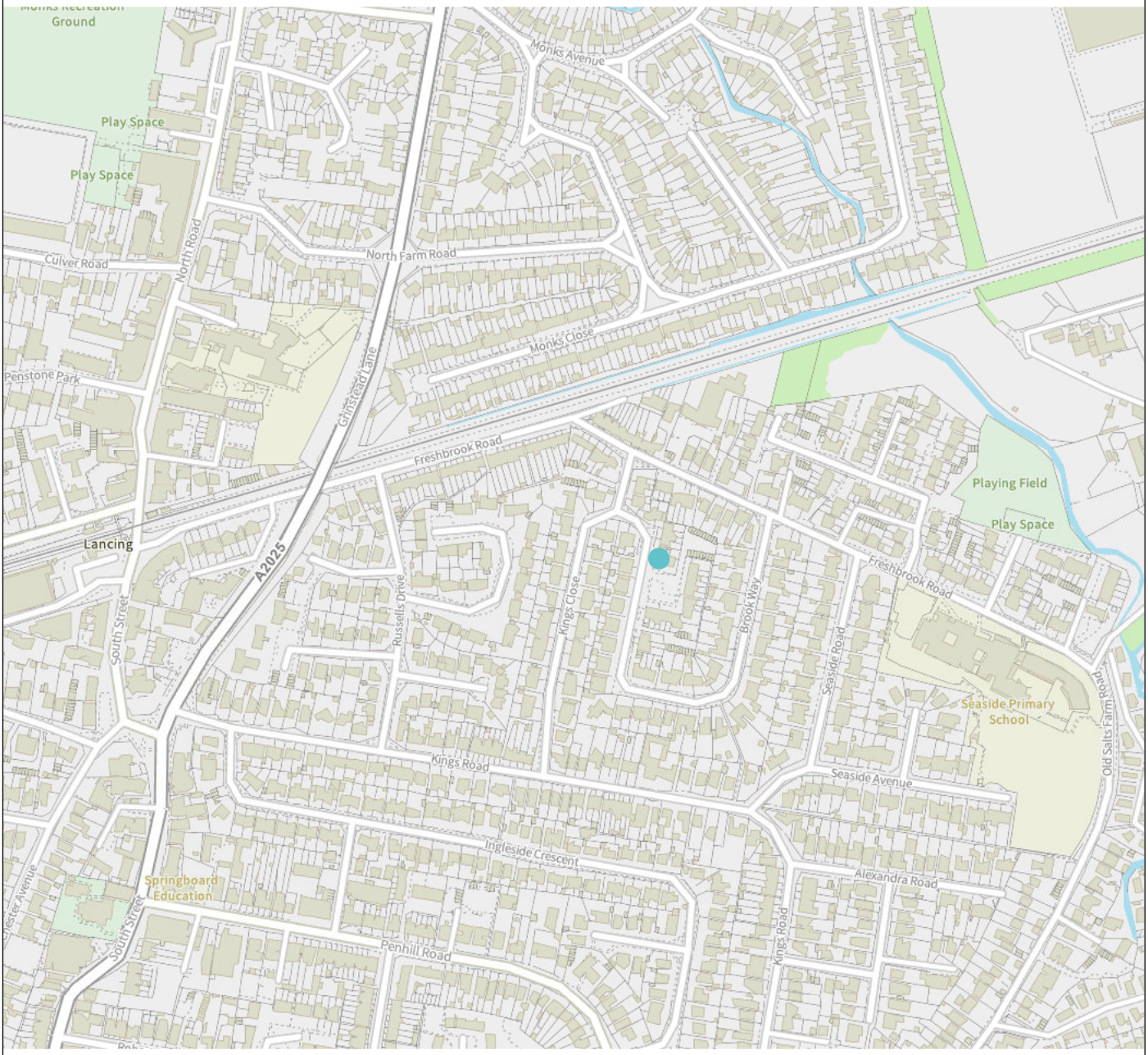
Linear Drainage Channels

The channel drains have removable gratings which allow access to the channel for the removal of leaves and debris. The outlet from the channel is via a catchpit which can be accessed by removal of the grating for the removal of any accumulated debris.

Appendices

- Site Location Plan
- Flood Maps for Planning
- Fluvial Flood Map
- Surface Water Flood Map
- Reservoir Flooding
- Geoindex Map
- Topographical Survey
- Sewer Asset Plan
- Site Layout Proposals
- Groundwater Monitoring Letter Report
- BRE 365 Soakage Testing
- ACO Multidrain detail
- Polystorm Datasheet
- Drainage Layout Plan
- Calculations

Location Plan



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0 0.1 0.2
km

Projection = OSGB36
xmin = 517700
ymin = 104000
xmax = 519500
ymax = 104800

Map produced by MAGIC on 15 March, 2023.
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Flood map for planning

Your reference	Location (easting/northing)	Created
<Unspecified>	**518667/104372**	**15 Mar 2023 16:55**

Your selected location is in flood zone 1, an area with a low probability of flooding.

You will need to do a flood risk assessment if your site is **any of the following:**

- bigger that 1 hectare (ha)
- In an area with critical drainage problems as notified by the Environment Agency
- identified as being at increased flood risk in future by the local authority's strategic flood risk assessment
- at risk from other sources of flooding (such as surface water or reservoirs) and its development would increase the vulnerability of its use (such as constructing an office on an undeveloped site or converting a shop to a dwelling)

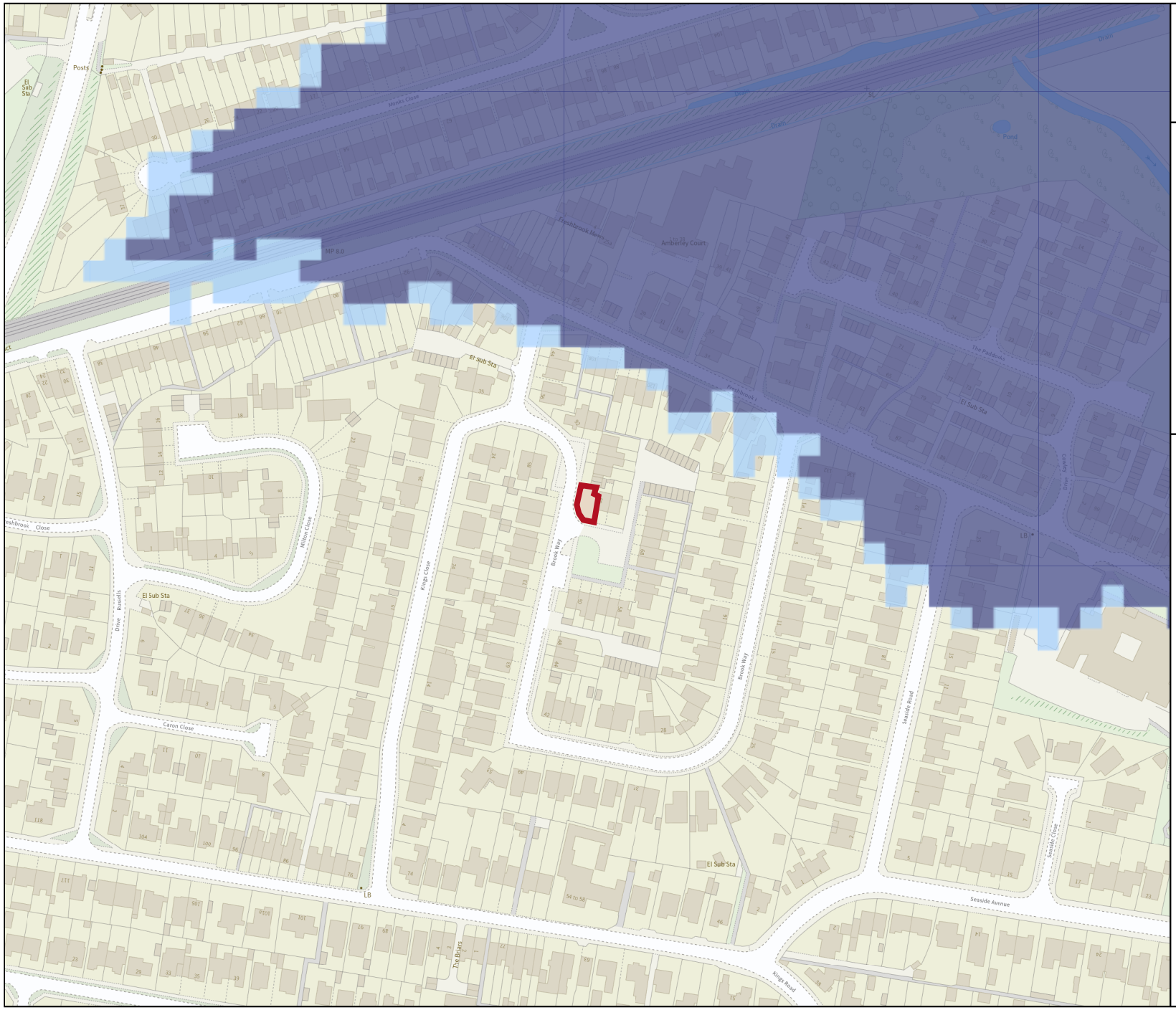
Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence **which** sets out the terms and conditions for using government data. https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2022 OS 100024198. https://flood-map-for-planning.service.gov.uk/os-terms



Environment Agency

Flood map for planning

Your reference
<Unspecified>

Location (easting/northing)
518667/104372

Scale
1:2500

Created
15 Mar 2023 16:55

- Selected area
- Flood zone 3
- Flood zone 2
- Flood zone 1
- Flood defence
- Main river
- Water storage area

0 20 40 60m

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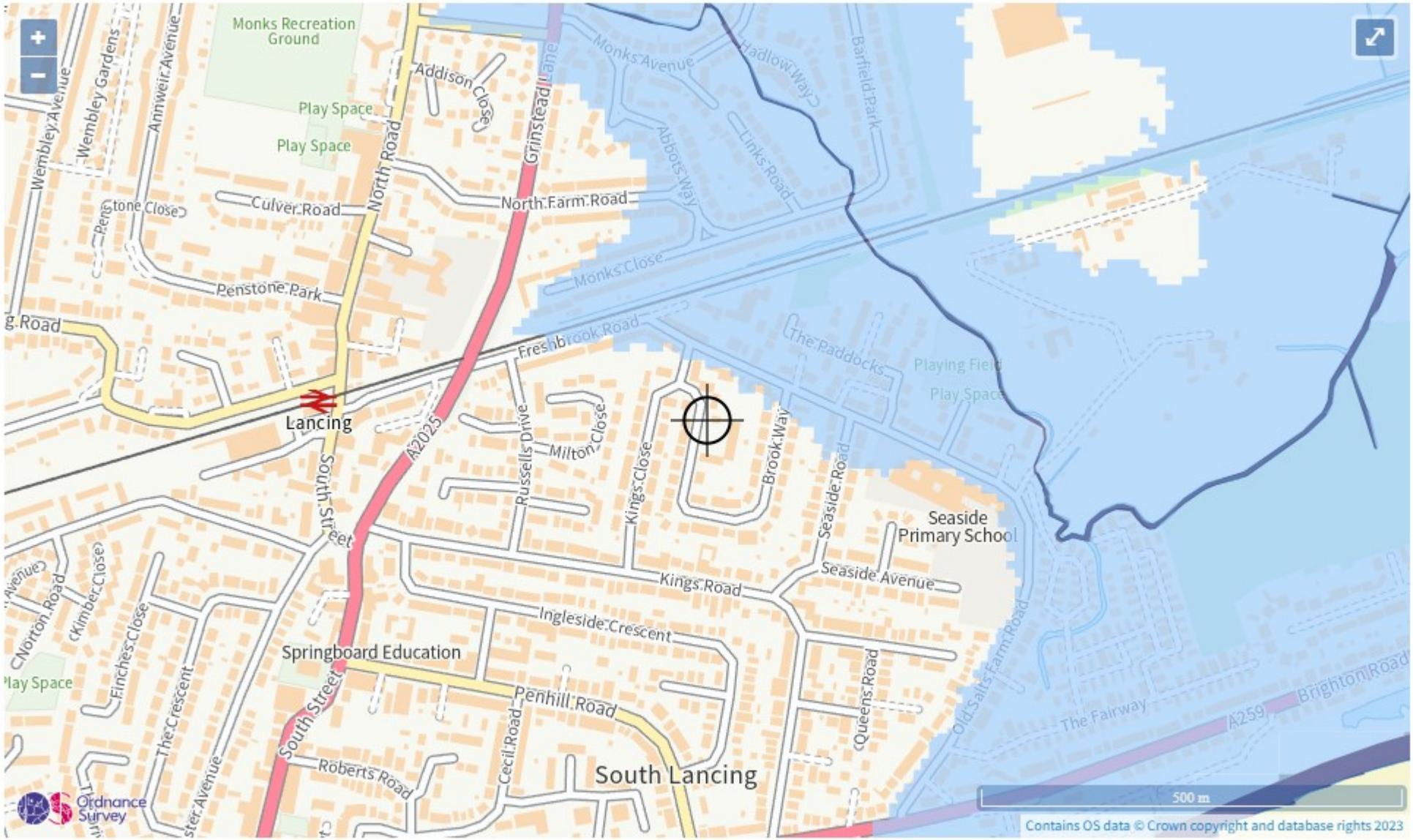
Flood risk

Extent of flooding

Location

BN15 8DH



Extent of flooding from rivers or the sea

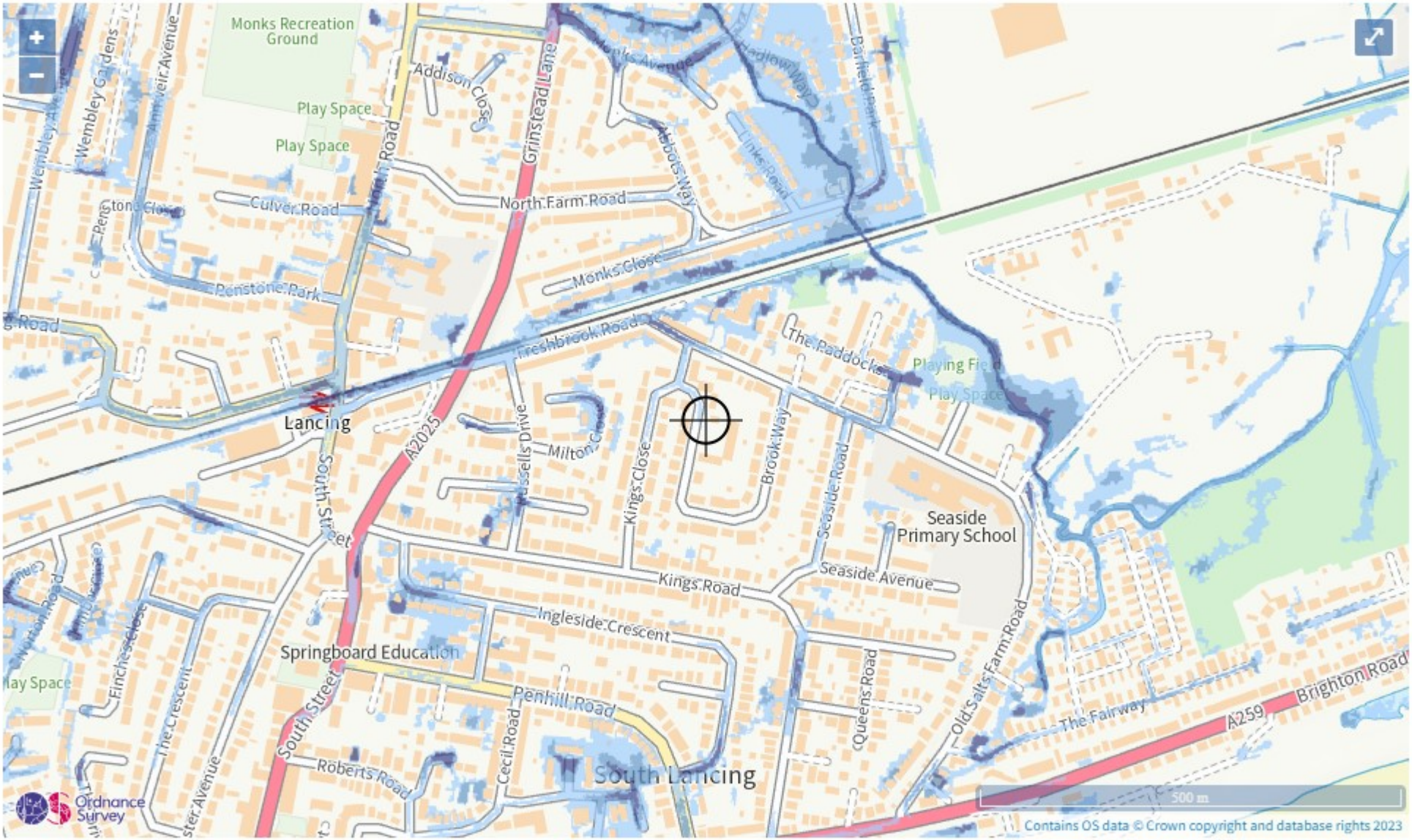
High Medium Low Very low Location you selected

Flood risk

Extent of flooding

Location

BN15 8DH



Extent of flooding from surface water

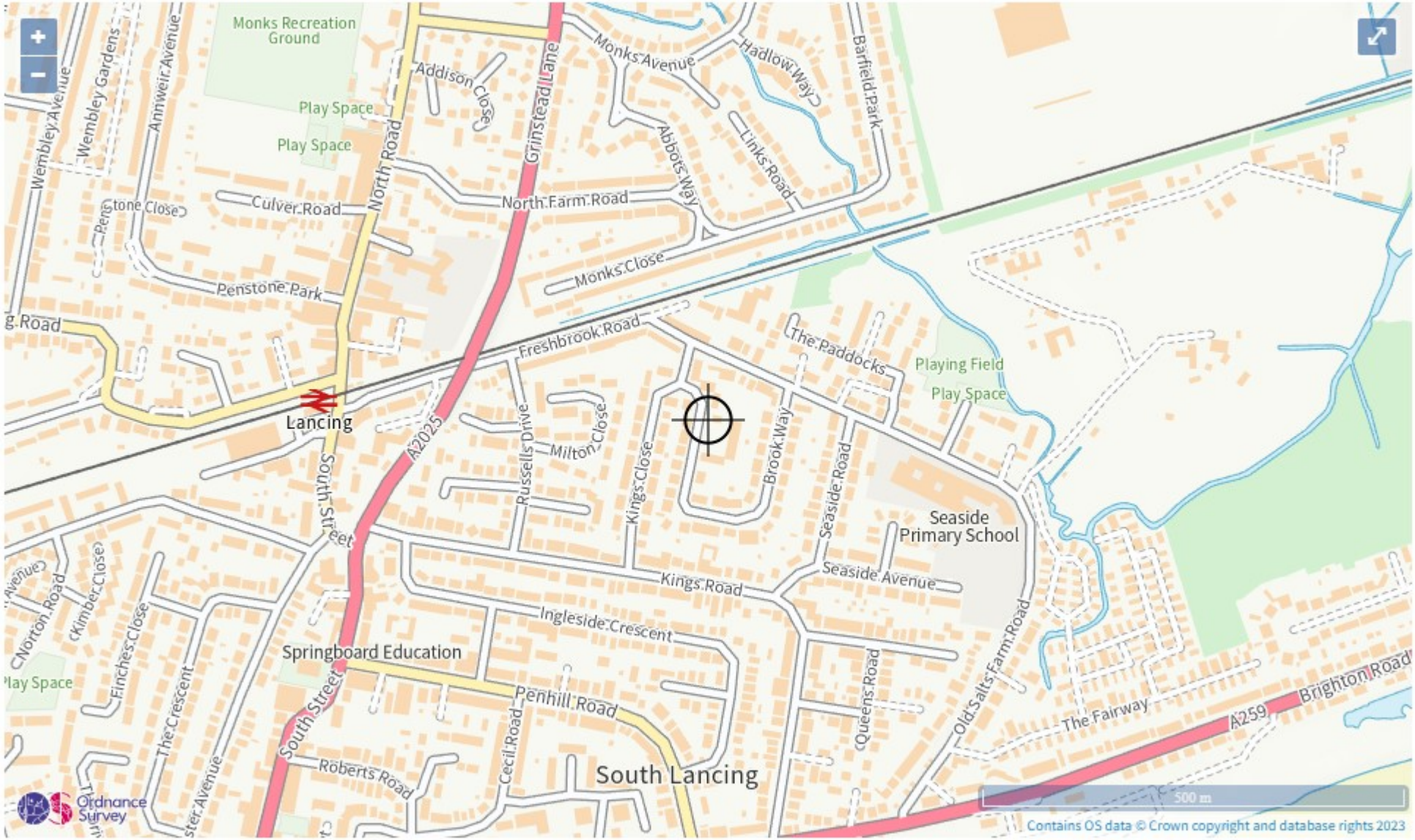
High Medium Low Very low Location you selected

Flood risk

Extent of flooding

Location

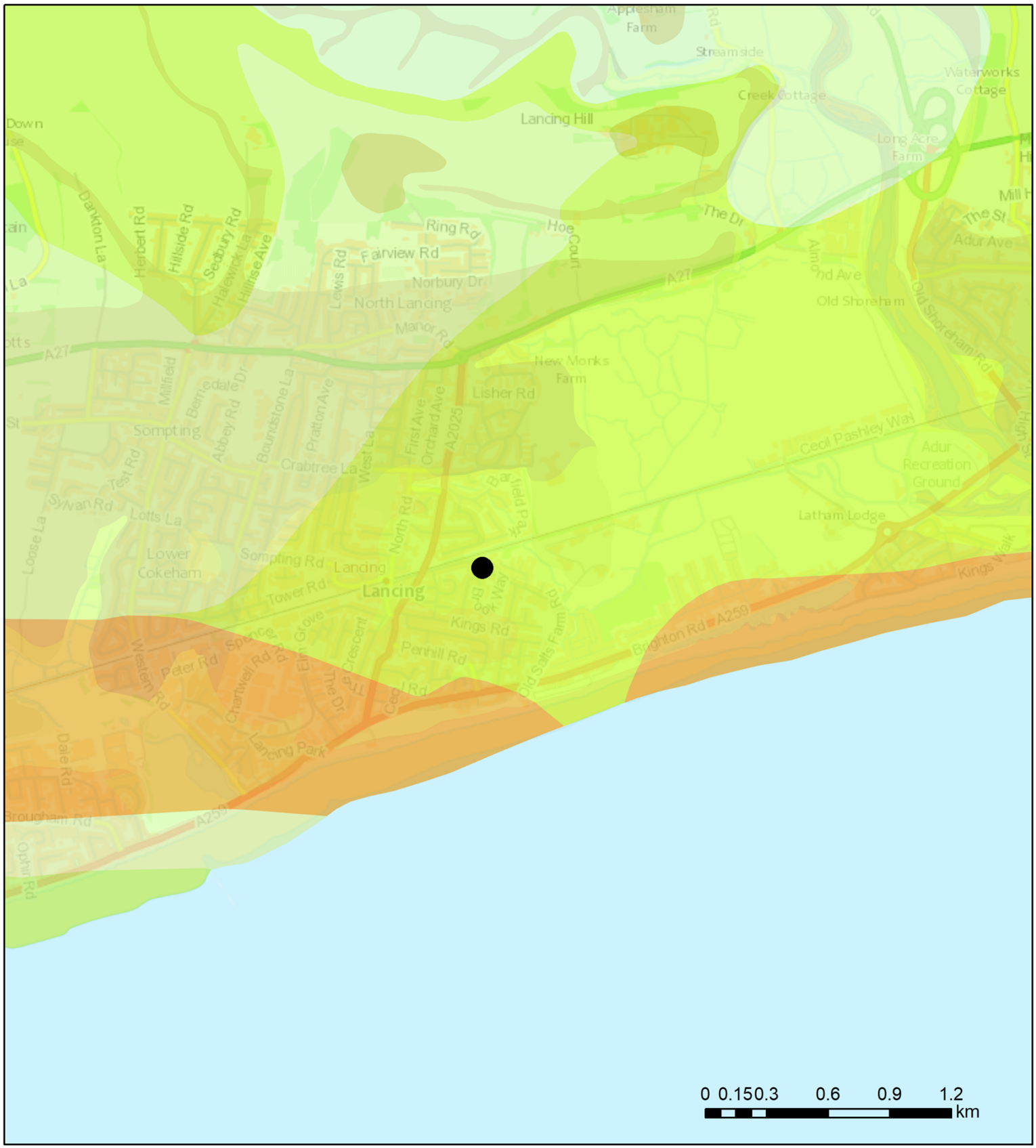
BN15 8DH



Maximum extent of flooding from reservoirs:

when river levels are normal | when there is also flooding from rivers | Location you selected

GeoIndex Report



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GeoIndex Onshore Data Sources: NERC, Natural England, English Heritage and Ordnance Survey

Map Key

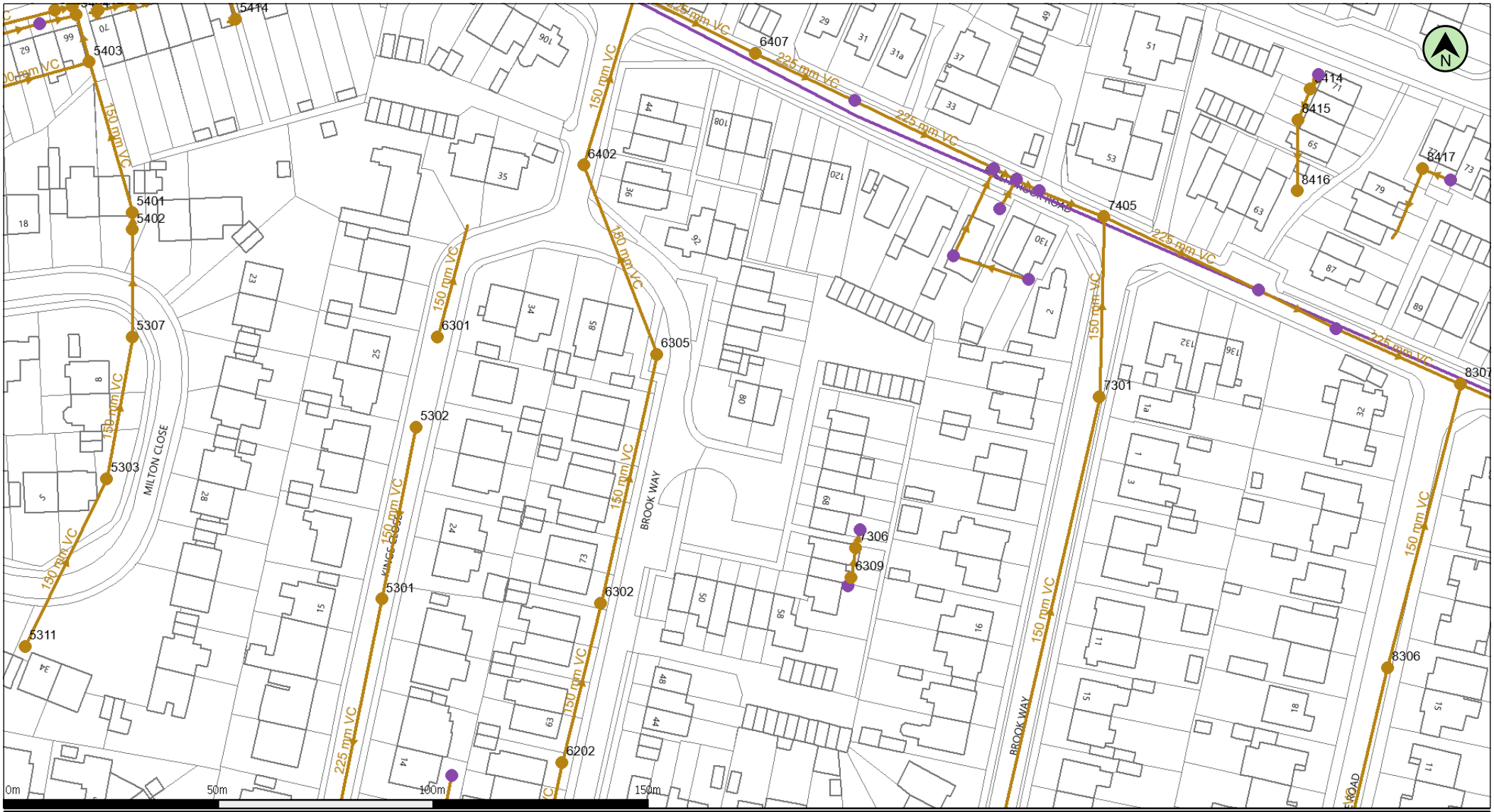
Superficial deposits 1:50,000 scale

- ALLUVIUM - CLAY, SILT, SAND AND PEAT
- HEAD - CLAY, SILT, SAND AND GRAVEL
- RIVER TERRACE DEPOSITS (UNDIFFERENTIATED) - SAND, SILT AND CLAY
- RAISED BEACH DEPOSITS - SAND AND GRAVEL
- BEACH AND TIDAL FLAT DEPOSITS (UNDIFFERENTIATED) - CLAY, SILT, SAND AND GRAVEL
- TIDAL FLAT DEPOSITS - CLAY, SILT, SAND AND GRAVEL
- HEAD, 1 - CLAY, SILT, SAND AND GRAVEL
- CLAY-WITH-FLINTS FORMATION - CLAY, SILT, SAND AND GRAVEL

Bedrock geology 1:50,000 scale

- LONDON CLAY FORMATION - CLAY, SILT AND SAND
- SPETISBURY CHALK MEMBER - CHALK
- TARRANT CHALK MEMBER - CHALK
- NEW PIT CHALK FORMATION - CHALK
- LEWES NODULAR CHALK FORMATION - CHALK
- LAMBETH GROUP - CLAY, SILT AND SAND
- NEWHAVEN CHALK FORMATION - CHALK

Selection Results



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Date: 25/05/22 | Scale: 1:1250 | Map Centre: 518675,104372 | Data updated: 27/04/22 | Our Ref: 863842 - 1 | Wastewater Plan A4

The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy. The actual positions should be determined on site. This plan is produced by Southern Water Services Ltd (c) Crown copyright and database rights 2022 Ordnance Survey 100031673 .This map is to be used for the purposes of viewing the location of Southern Water plant only. Any other uses of the map data or further copies is not permitted.

WARNING: BAC pipes are constructed of Bonded Asbestos Cement.

WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement.

Foul Gravity Sewer
Combined Gravity Sewer
Culverted Water Course or Treated Effluent
Surface Water Gravity Sewer
Rising Main, Vacuum or Syphon
Combined Outfall
Surface Water Outfall
Foul Outfall
Surface Water Inlet
Combined Pumping Station
Surface Water Pumping Station
Foul Pumping Station
WWTW Water Treatment Works
Section 104 Area
Building Over Agreement Area
Foul Manhole
Combined Manhole
Surface Water Manhole
Side Entry Manhole, Decarcation Chamber, Dummy Manhole or Surface Water Soakaway

jamie.finch@roadsandsewers.co.uk

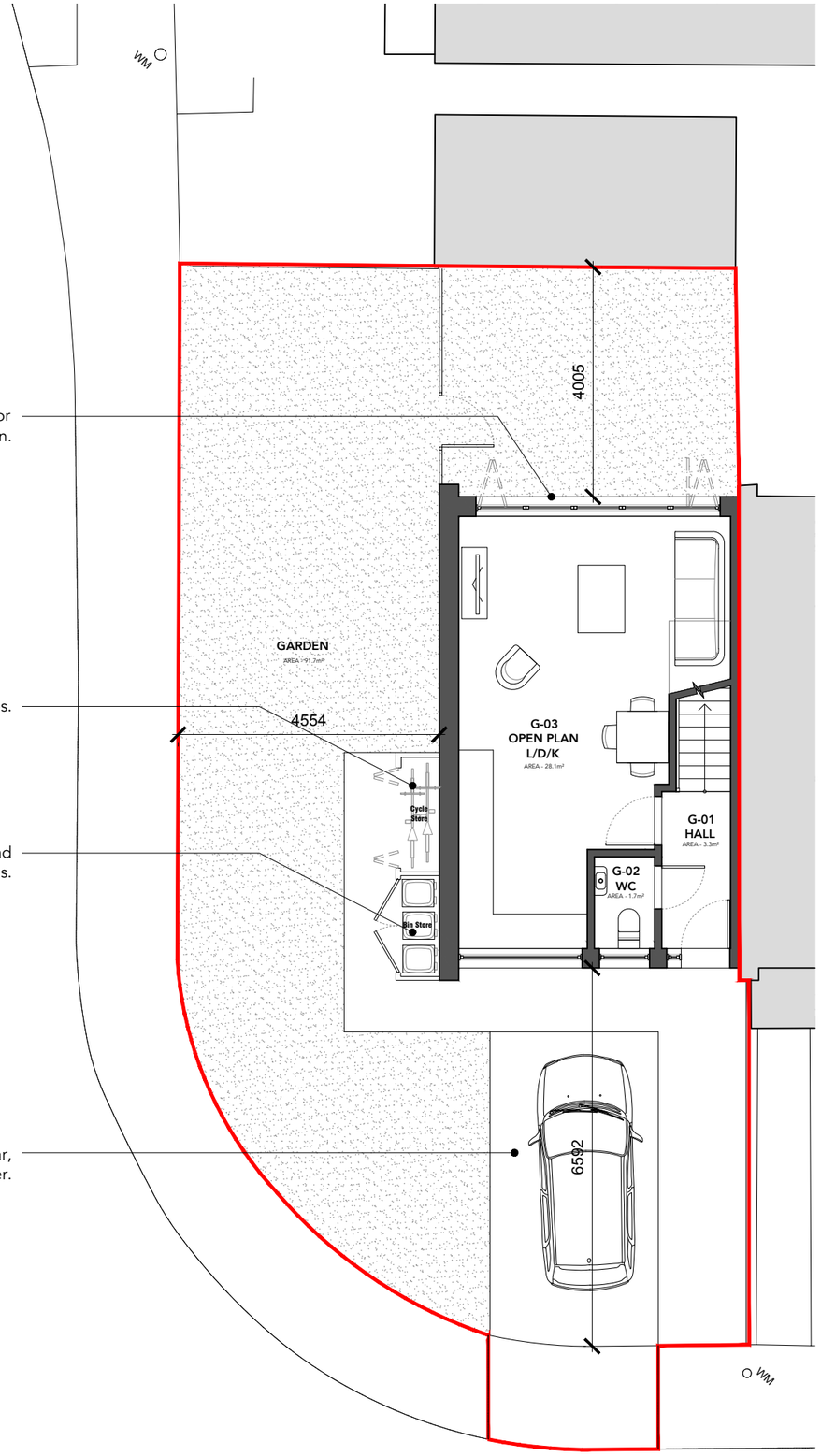
Brook Way, Lancing

WATER for LIFE from Southern Water

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert
5301	F	7.02	4.76	-
5302	F	6.35	5.51	-
5303	F	4.53	3.51	-
5307	F	4.33	3.29	-
5311	F	5.31	4.03	-
5401	F	4.70	3.00	-
5402	F	4.56	3.04	-
5403	F	4.67	3.97	-
5404	F	4.56	3.78	-
5405	F	4.46	2.65	-
5406	F	4.57	2.63	-
5414	F	4.29	3.65	-
5421	F	4.56	3.90	-
6202	F	7.39	5.81	-
6301	F	5.91	4.21	-
6302	F	6.70	5.14	-
6305	F	5.53	0.00	-
6309	F	0.00	0.00	-
6402	F	4.73	3.23	-
6407	F	3.88	1.85	-
7301	F	4.62	3.27	-
7306	F	0.00	0.00	-
7405	F	4.15	4.15	-
8306	F	4.82	2.47	-
8307	F	3.58	3.58	-
8414	F	0.00	0.00	-
8415	F	0.00	0.00	-
8416	F	0.00	0.00	-
8417	F	0.00	0.00	-

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert

Do Not Scale. All dimensions and conditions are to be checked on site prior to preparing drawings or commencing any work. © This drawing is the property of JDRM Architectural Design LLP and protected by the Copyright, Designs and Patents Act, 1988

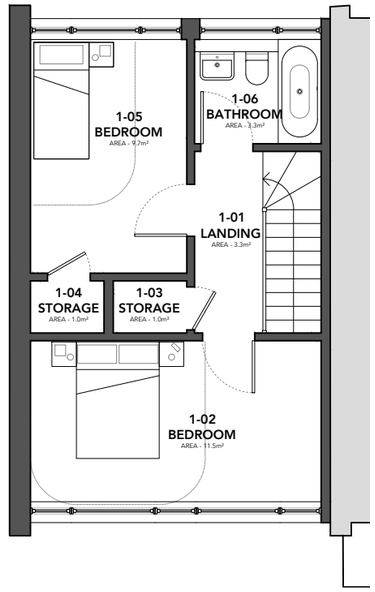


Bi-fold doors to the rear for access to the garden.

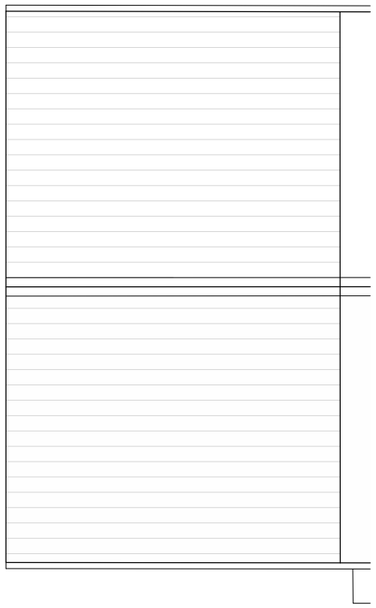
Secure bike store for 2no. bicycles.

Bin store for refuse, recycling and garden bins.

Off road parking for 1no. car, with new associated crossover.



02-Proposed Plan 1:100
First Floor



03-Proposed Plan 1:100
Roof

N

0 0.5 1 2 3 4 5 10
Scale in metres

01-Proposed Plan 1:100
Ground Floor

0 0.5 1 2 3 4 5 10
Scale in metres

F	04/08/21	Amendments to suit planning officer's comments.	GG	RM
E	29/06/21	1-05 changed to single bedroom	GG	RM
D	04/06/21	Dimensions Added to Boundaries	GG	RM
C	21/05/21	Issued for Planning	GG	RM
B	18/05/21	Issued for comment	GG	RM
A	30/04/21	First Issue	GG	RM

Date: Notes: Drawn: Checked:

Project:
Brook Way, Lancing
Land Adjacent to 80 Brook Way, Lancing, BN15 8DH
The Nice Group Ltd

JDRM architectural design llp

drawing number:
2185(21)001
rev:
F

Proposed Plans

Scale: 1:100 @A3

Issued for:
APPROVAL

Drawn by: GG
Checked by: RM

STUDIO 8 | BEACONSFIELD STUDIOS | 25 DITCHLING RISE BRIGHTON | BN1 4QL
w w w . j d r m a r c h i t e c t u r e . c o m

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Jamie Bannon
80 Brook Way
Lancing
Sussex
BN15 8DH

15th March 2022

Our Ref: 4644 22 03 15 Ltr Rpt 01 Rev A AK JB

Dear Jamie,

SITE: 80 Brook Way, Lancing, Sussex, BN15 8DH
SERVICE: Groundwater Monitoring Letter Report

Following your instruction to conduct Mini Boreholes to Facilitate Winter Groundwater Monitoring in accordance with our quotation 4644 22 02 22 Ltr 01 FPA 01 Rev A AW JB dated February 2022, Sevenoaks Environmental Consultancy Ltd (SEC) attended the above site on the 25th February to undertake the work.

Introduction

The site was noted to form an irregular shaped plot covering an area of ~0.02 Ha, comprising soft landscaping and hardstanding in the form of a footpath and concrete slabs to the west of the property where a caravan use to sit (See Appendix A - Figure 1 – Site Location). The approved proposed development associated with the planning application (Ref: AWDM/1004/21) is understood to involve the construction of 1no. residential dwelling with 1no. parking space to the west of the property.

An SEC Engineer attended site on the 25th February 2022, to supervise the drilling of 3no. mini boreholes (WS01-WS03) up to 6m bgl with a Continuous Dynamic Sampler drill rig (See Appendix B – Site Photos) which were positioned to provide good coverage across the site.

Geology

The geological records for the site obtained from the British Geological Survey Website indicate that the site is underlain by solid geology comprising of the Newhaven Chalk Formation (Chalk) with overlying superficial comprising beach deposits (Sand and Gravel).

Sevenoaks Environmental Consultancy Ltd. – Registered in England 5330038 - VAT Registration No. 851 0732 49

The scope of works undertaken generally comprised:

- Production of RAMS
- Conduct of hand dug safety starter pits up to 1.20m bgl (including use of a Cable Avoidance Tool (CAT) to help avoid causing damage to buried services);
- Full time site supervision by a SEC Engineer to log the ground conditions as appropriate to BS 5930 / Eurocode 7 and CIRIA 574 and documenting the investigation, number of days is subject to project progress;
- Conduct of 3 no. Mini Boreholes boreholes up to 6m bgl using a Continuous Dynamic Sampling drill rig;
- Installation of Ground Water monitoring pipework within the mini boreholes to facilitate Groundwater Monitoring; and
- Conduct of groundwater monitoring visits and production of a Factual Report providing the raw data;

Soft landscaping was encountered at all exploratory hole locations, comprising topsoil up to 0.15m bgl at all locations.

Made Ground was encountered within all of the exploratory holes up to between 0.5m bgl (WS02) and 1m bgl (WS03) and comprised a gravelly Clay / sandy gravelly Clay with varying frequencies of flint, brick and clinker fragments.

Natural deposits encountered beneath the Made Ground generally comprised Clay / Sand up to 5.1m bgl, underlain by bedrock geology comprising Chalk proven up to 6.00m bgl (WS01, WS02 and WS03). (See Appendix C - Exploratory Hole Records and Appendix A - Figure 2 for Exploratory Hole Location Plan).

During the drilling of the 3no. boreholes no groundwater was encountered, however after the installation of monitoring pipework the holes were dipped and groundwater was recorded between 4.3m bgl (WS01) and 4.51m bgl (WS02).

Following the initial drilling of the boreholes, SEC returned to site to carry out groundwater monitoring visits. The borehole installations were monitored using a dip meter to establish the groundwater level. During both monitoring visits groundwater was encountered in all boreholes between 4.31m bgl (WS01) and 4.69m bgl (WS02) (See Appendix D - Groundwater Monitoring Data).

See Appendix E for General Limitations and Exceptions

Kind Regards

Damian Jones
Managing Director
d.jones@sevenoaksenvironmental.co.uk

enc –
Appendix A – Figures
Appendix B – Site Photos
Appendix C – Exploratory Hole Records
Appendix D – Groundwater Monitoring Data

Appendix A

Figures



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SITE: 80 Brook Way, Lancing, Sussex, BN15 8DH	SCALE: NTS	JOB NO: 4644	SEVENOAKS ENVIRONMENTAL CONSULTANCY
FIGURE TITLE: Site Location Plan	REV: 01	FIGURE NO: 1	



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SITE: 80 Brook Way, Lancing, Sussex, BN15 8DH	SCALE: NTS	JOB NO: 4644	SEVENOAKS ENVIRONMENTAL CONSULTANCY
FIGURE TITLE: Exploratory Hole Plan	REV: 01	FIGURE NO: 2	

Appendix B

Site Photos



Photo 1—Showing the front of the site.



Photo 2— Showing a side view of the property.



Photo 3— Core collection between 1m—4m bgl WS02 showing natural ground



Photo 4—Natural ground sample collected at 1.5m —2.8M bgl from WS02.



Photo 5—View down WS02



Photo 6— View of finished borehole with cover

Appendix C

Exploratory Hole Records

SEVENOAKS ENVIRONMENTAL CONSULTANCY

WINDOW SAMPLE LOG

Project				Window Sample No
Site Investigation - 80 Brook Way, Lancing, Sussex, BN15 8DH				**WS01**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
4644	25-02-22			
Contractor				Sheet
Sevenoaks Environmental Consultancy Ltd				1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
						0.13	MADE GROUND: Grass over black soft slighlty silty gravelly Clay. gravel comprises sub-angular to sub-rounded fine to medium flint fragments with abundant rootlets.		
0.40	D	0ppm				(0.47) 0.60	MADE GROUND: Dark brown soft slighlty gravelly Clay. gravel comprises sub-angular to sub-rounded fine to coarse flint fragments with rare angular to sub-angular fine to coarse brick fragments, sub-angular fine to coarse clinker fragments and occasional rootlets.		
0.80	D	0ppm					Brown soft slighlty gravelly CLAY. gravel comprises sub-angular to sub rounded flint fragments.		
1.50	D	0ppm					@1m clay becomes stiff @2m clay becomes soft @3m becomes slightly chalky		
2.50	D	0ppm				(3.60)			
3.50	D	0ppm							
4.10	D	0ppm				4.20	Recovered as white structureless slightly gravelly clayey CHALK. Clay is soft, gravel comprises angular to sub-rounded fine to coarse flint fragments.		
4.60	D	0ppm							
5.50	D	0ppm				(1.80)			
						6.00			

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
											No groundwater encountered

All dimensions in metres Scale 1:50	Client Jamie Bannon	Method/ Plant Used CDS Rig	Logged By AK

WINDOW SAMPLE LOG 4644 80 BROOK WAY.GPJ AGS3_ALL.GDT 29/3/22

SEVENOAKS ENVIRONMENTAL CONSULTANCY

WINDOW SAMPLE LOG

Project				Window Sample No
Site Investigation - 80 Brook Way, Lancing, Sussex, BN15 8DH				**WS02**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
4644	25-02-22			
Contractor				Sheet
Sevenoaks Environmental Consultancy Ltd				1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
						0.05	MADE GROUND: Grass over black soft grass over slightly silty Clay (topsoil) with abundant rootlets.		
0.30	D	0ppm				(0.45) 0.50	MADE GROUND: Dark brown very soft slightly gravelly silty Clay. gravel comprises sub-angular to sub-rounded fine to coarse flint and brick fragments with occasional sub-angular fine to medium clinker fragments and occasional rootlets.		
0.70	D	0ppm					Brown soft slightly gravelly CLAY. gravel comprises sub-angular to sub-rounded fine to medium flint fragments.		
1.50	D	0ppm				(1.80)	@1.2m Clay becomes stiff		
2.20	D	0ppm				2.30			
2.50	D	0ppm				2.60	Light brown loose slightly clayey SAND. Sand is fine to medium, clay is soft.		
2.80	D	0ppm					Brown stiff slightly sandy CLAY. sand is fine.		
3.40	D	0ppm				(1.00) 3.60	@3.2m becomes light brown		
3.80	D	0ppm					Cream loose slightly gravelly SAND. Sand is fine to medium, gravel comprises rare sub-angular fine to medium flint fragments.		
4.30	D	0ppm				(0.90) 4.50	@4.4m becomes very gravelly medium to coarse sub-angular to angular flint fragments		
4.70	D	0ppm				(0.60) 5.10	Brown stiff gravelly CLAY. gravel comprises sub-angular to sub-rounded medium to coarse flint fragments.		
5.50	D	0ppm				(0.90) 6.00	Recovered as white structureless very gravelly clayey CHALK. clay is stiff, gravel comprises sub-angular to rounded medium to coarse flint fragments.		

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
											No groundwater encountered

All dimensions in metres Scale 1:50	Client Jamie Bannon	Method/ Plant Used CDS Rig	Logged By AK

WINDOW SAMPLE LOG 4644 80 BROOK WAY.GPJ AGS3_ALL.GDT 29/3/22

SEVENOAKS ENVIRONMENTAL CONSULTANCY

WINDOW SAMPLE LOG

Project				Window Sample No
Site Investigation - 80 Brook Way, Lancing, Sussex, BN15 8DH				**WS03**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
4644	25-02-22			
Contractor				Sheet
Sevenoaks Environmental Consultancy Ltd				1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
						0.15	MADE GROUND: Grass over dark brown soft gravelly Clay. gravel comprises sub-angular to angular fine to medium flint fragments.		
0.20	D	0ppm				0.20			
0.30	D	0ppm				0.50	MADE GROUND: Dark brown soft slightly sandy gravelly Clay. gravel comprises sub-angular to rounded fine to medium flint fragments, sand is medium to coarse.		
0.80	D	0ppm				(0.50) 1.00	MADE GROUND: Brown soft gravelly Clay. gravel comprises sub-angular to sub-rounded fine to medium flint fragments with rare clinker fragments.		
1.50	D	0ppm					MADE GROUND: Brown soft slightly gravelly Clay. gravel comprises sub-angular to rounded fine to medium flint fragments with rare clinker fragments.		
						(1.80)	Light brown firm to soft slightly gravelly CLAY. gravel comprises rare sub-rounded to rounded fine to medium flint fragments.		
2.50	D	0ppm				2.80			
2.90	D	0ppm				3.00	Light brown firm to soft slightly gravelly very sandy CLAY. sand is fine to medium.		
3.40	D	0ppm				(0.60) 3.60	Cream dense very gravelly SAND. Sand is fine, gravel comprsies sub-angular to angular fine to coarse flint fragments.		
3.80	D	0ppm					Recovered as white structurless slightly gravelly clayey CHALK. clay is stiff, chalk is angular to sub-angular fine to coarse flint fragments. @4-4.1m band of sandy CLAY @5-5.2m becomes cream very clayey CHALK		
4.50	D	0ppm				(2.40)			
5.10	D	0ppm							
5.50	D	0ppm				6.00			

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	No groundwater encountered

All dimensions in metres Scale 1:50	Client Jamie Bannon	Method/ Plant Used CDS Rig	Logged By AK

WINDOW SAMPLE LOG 4644 80 BROOK WAY.GPJ AGS3_ALL.GDT 29/3/22

Appendix D

Groundwater Monitoring Data

SEVENOAKS ENVIRONMENTAL CONSULTANCY

Date: 25/02/2022
Site: 80 Brook Way
Job Ref: 4644
Monitoring Round: 1

Borehole Ref:	Dip	Plumb
WS01	4.30	5.90
WS02	4.51	5.64
WS03	4.41	5.94

SEVENOAKS ENVIRONMENTAL CONSULTANCY

Date: 11/03/2022
Site: 80 Brook Way
Job Ref: 4644
Monitoring Round: 2

Borehole Ref:	Dip	Plumb
WS01	4.41	6.07
WS02	4.60	5.62
WS03	4.51	5.95

SEVENOAKS ENVIRONMENTAL CONSULTANCY

Date: 25/03/2022
Site: 80 Brook Way
Job Ref: 4644
Monitoring Round: 3

Borehole Ref:	Dip	Plumb
WS01	4.49	6.07
WS02	4.69	5.65
WS03	4.59	5.95

Appendix E

General Limitations and Exceptions

General Limitations and Exceptions

1. The advice given in this report with respect to contaminated land/pollution is based on the guidelines available at the time of writing.

2. This report does not include for an assessment of above-ground structures on site for the presence of potential asbestos containing materials.

3. The Client is advised that the conditions observed on site by SEC at the time of the investigation or assessment is subject to change. Certain indicators of the presence of hazardous substances may have been latent at the time of the most recent site reconnaissance or investigation and they may subsequently have become observable.

4. Comments made relating to land gas or groundwater conditions are based on observations made at the time of an investigation unless otherwise stated. However, land gas or groundwater conditions may vary as a result of seasonal or other effects. It would be prudent to conduct groundwater monitoring.

5. This assessment may be subject to amendment in light of additional information becoming available.

6. The findings and opinions conveyed in this report are based on information obtained from a variety of sources, including that from chemical testing laboratories, and which SEC has assumed are correct. Nevertheless, SEC cannot and does not guarantee the authenticity or reliability of the information it has relied upon. SEC can accept no responsibility for inaccuracies within the data supplied by other parties.

7. This report is written in the context of an agreed scope of work between SEC and the Client and should not be used in a different context. In light of additional information becoming available, improved practices and changes in legislation amendment or re-interpretation of the assessment or report in whole or part may be necessary after its original submission.

8. This report is provided for sole use by the Client and is confidential to them. No responsibility whatsoever for the contents of the report will be accepted to anyone other than the Client.

9. SEC believes that providing information about limitations is essential to help the Client identify and thereby manage risks.

10. The copyright of written materials supplied shall remain the property of SEC but with a royalty free perpetual licence, granted to the Client on payment in full of any outstanding monies.

11. SEC does not provide legal advice and the advice of the Client‘s legal advisors may also be required.

12. No allowance has been made in this report for testing which may be required for waste categorisation prior to the removal of any material from site for disposal.

13. The report is issued on the condition that SEC will under no circumstances be liable for any loss arising directly or indirectly from ground conditions between the boreholes or trial pits which have not been shown by the borehole, trial pits or other tests carried out during the investigation.

14. In addition, SEC will not be liable for any loss whatsoever arising directly or indirectly from any opinion given on the possible configuration of strata both between the borehole and/or trial pit positions and/or below the maximum depth of the investigation. Such opinions, where given, are for guidance only.

15. No person other than the client to whom this report is addressed, shall rely on it in any respect and no duty of care shall be owed to any such third party.

16. Copyright of this Report remains with SEC and in addition we will not accept any responsibility for the report and recommendations given until our invoice is settled in full.

17. That this investigation has relied on information from a discrete number of exploratory hole locations and allowances should be made for the variation in ground conditions between these locations and within the site boundary.

18. It should be noted that the Made Ground depth recorded above is that encountered within the trial pits undertaken during the phase of work to which this report pertains. Owing to the variable nature and unknown deposition criteria of Made Ground it is possible that deeper or more extensive areas of Made Ground may exist at this site which have not been revealed by the current work.

19. Should the proposed end use or site layout change then a reassessment of potential risks will be required.

SEVENOAKS ENVIRONMENTAL CONSULTANCY

145a Hastings Road
Pembury
Tunbridge Wells
Kent, TN2 4JU

Tel: 01892 822 999

www.sevenoaksenvironmental.co.uk

enquiries@sevenoaksenvironmental.co.uk

Jamie Bannon,
80 Brook Way,
Lancing,
Sussex,
BN15 8DH

21st December 2022

Our Ref: 5132 22 12 21 Ltr Rpt 01 Rev A RC JB

Dear Jamie,

SITE: 80 Brook Way, Lancing, Sussex, BN15 8DH
SERVICE: BRE 365 Soakage Testing

Following your instruction to proceed with the conduct of a BRE365 Soakage Test at the above site in accordance with our quotation dated 9th December 2022 (Ref: 5132 22 12 09 Ltr 01 FPA 01 Rev A RC JB), Sevenoaks Environmental Consultancy Ltd (SEC) attended the site on the 21st December 2022 to undertake the work.

At the time of writing, the site comprised an irregular shaped plot of land adjacent to 80 Brook Way covering an area of ~0.02 Ha. It comprised an area of soft landscaping with a residential property to the east and a caravan situated adjacent to this to the west. Ground level across the site was generally flat (See attached Appendix A – Figure 1 Existing Site Layout Plan). Access to the site was afforded via Brook Way to the west and south.

The scope of investigation was agreed with Drainage Engineer and consisted of 1 no. soakage test pit location as indicated on the attached Exploratory Hole Location Plan (See attached Appendix A – Figure 2 Exploratory Hole Location Plan). It is understood that the BRE365 soakage test was required to help determine the rates of infiltration into the underlying ground for soakaway design purposes.

It is noted that SEC previously produced Groundwater Monitoring Letter Report (Ref: 4644 22 03 15 Ltr Rpt 01 Rev A AK JB) for the site in March 2022. This letter report should be read in conjunction with the previous report.

From a brief review of the BGS Geological Mapping, the site is underlain by bedrock geology comprising the Newhaven Chalk Formation (Chalk) with overlying superficial beach deposits (Sand and Gravel).

From the previous investigation conducted on site by SEC ground conditions on site included Made Ground up to ~0.60m bgl (WS01) underlain by soft slightly gravelly Clay up to ~4.2m bgl, underlain by slightly gravelly clayey Chalk proven up to ~6.0m. There was no groundwater identified within any of the exploratory boreholes conducted on site during drilling, however during the groundwater monitoring undertaken, groundwater levels were recorded to be between 4.30m bgl (WS01) and 4.51m bgl (WS02).

The scope of works undertaken by SEC in this current assessment generally comprised:

- Production of RAMS (inclusive of initial safety searches and preliminary UXO Risk Assessment);
- Full time site supervision by a suitably qualified and experienced SEC Engineer to conduct soakage tests to BRE 365 standard (subject to findings and progress on site) and record ground conditions within exploratory holes to BS 5930 / Eurocode 7 and CIRIA 574;
- Site attendance by a UXO Detection Engineer to clear proposed exploratory hole location;
- Provision of a Mechanical Excavator JCB 3CX with operator and 2000L water bowser to conduct BRE365 Soakage Tests; and
- Provision of a Factual Report to provide raw data from the BRE 365 test for others to interpret.

An SEC Engineer supervised the excavation of 1 no. trial pit (TP01) up to 2.2m bgl within the soft landscaping to the west of the existing residential property.

Ground conditions encountered within TP01 comprised grass over slightly gravelly Clay (Made Ground - topsoil) up to ~0.4m bgl, underlain by soft brown slightly gravelly Clay up to ~1.1m bgl, underlain by medium dense orangish brown Clay proven to base depths of ~2.2m. A more detailed account of ground conditions can be found in Appendix B – Exploratory Hole Records.

A BRE365 Soakage test was commenced in the trial pit (TP01), and given the slow infiltration rate observed, it was only possible to complete 1 no. test in the available time. It was noted that following discussion with the drainage engineer at the time of the test, the decision was taken to backfill the pit rather than persist with the test, see Appendix C for BRE 365 Soakage Data.

Please also see Appendix D attached for our General Limitations and Exceptions.

Kind regards

Damian Jones
Managing Director
d.jones@sevenoaksenvironmental.co.uk

Appendix A – Figures
- Figure 1 – Existing Site Layout Plan
- Figure 2 – Exploratory Hole Location Plan

Appendix B – Exploratory Hole Records
Appendix C – BRE365 Soakage Data
Appendix D – General Limitations and Exceptions

Appendix A

Figures



SITE: 80 Brook Way, Lancing, Sussex, BN15 8DH	SCALE: NTS	JOB NO: 5132	SEVENOAKS ENVIRONMENTAL CONSULTANCY
FIGURE TITLE: Existing Site Layout Plan	REV: 01	FIGURE NO: 1	



SITE: 80 Brook Way, Lancing, Sussex, BN15 8DH	SCALE: NTS	JOB NO: 5132	SEVENOAKS ENVIRONMENTAL CONSULTANCY
FIGURE TITLE: Exploratory Hole Location Plan	REV: 01	FIGURE NO: 2	

Appendix B

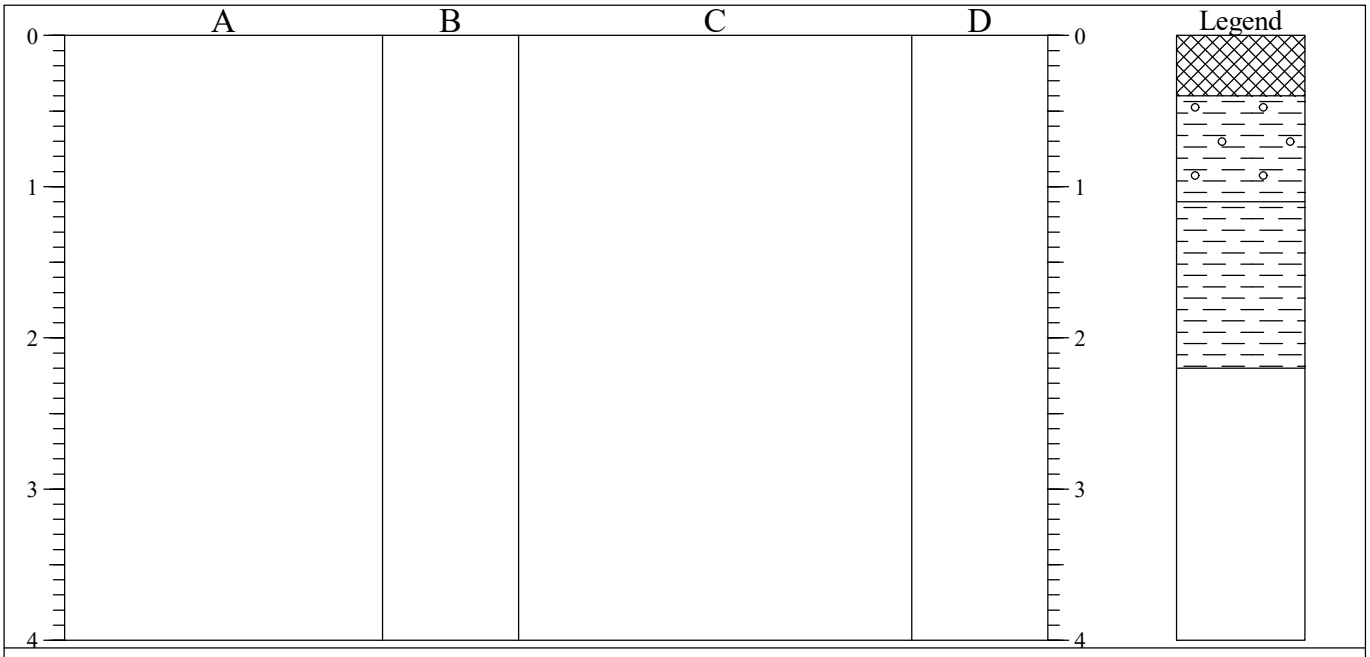
Exploratory Hole Records

SEVENOAKS ENVIRONMENTAL CONSULTANCY

Sevenoaks Environmental Consultancy Ltd
145a Hastings Road, Pembury, Tunbridge Wells, Kent
TN2 4JU
Telephone: 01892 822999
enquiries@sevenoaksenvironmental.co.uk

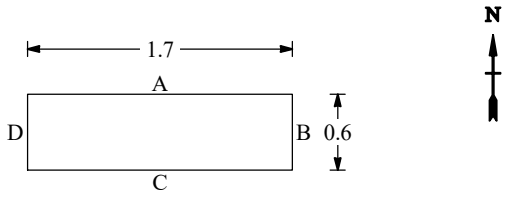
TRIAL PIT LOG

Project				TRIAL PIT No
BRE365 Investigation at 80 Brook Way, Lancing, Sussex, BN15 8DH				**TP01**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
5132	22-12-22			
Contractor				Sheet
Sevenoaks Environmental Consultancy Ltd				1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.40		MADE GROUND: Grass over soft dark brown slightly gravelly Clay (Topsoil). Gravels comprise rare fine to coarse subangular to subrounded flint and brick fragments.	0.30	D	
0.40-1.10		Soft brown slightly gravelly CLAY. Gravels comprise rare medium to coarse subangular flint fragments.	1.00	D	
1.10-2.20		Medium dense orangish brown CLAY.	1.50	D	
			2.00	D	

Shoring/Support:
Stability:



GENERAL REMARKS

No Groundwater Encountered

All dimensions in metres Scale 1:50	Client Jamie Bannon	Method/ Plant Used 3T Excavator	Logged By RC

Report ID: AGS4 UK TP || Project: 5132 80 BROOK WAY.GPJ || Library: GINT STD AGS 4_0.GLB || Date: 22 December 2022

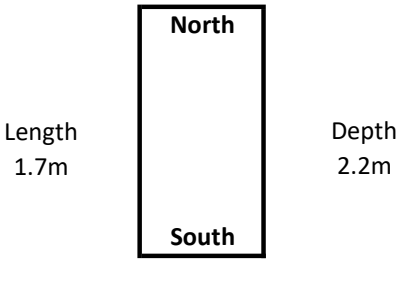
Appendix C

BRE365 Soakage Data

SEVENOAKS ENVIRONMENTAL CONSULTANCY

BRE 365 Soakage Test Results	
Site Reference	5132
Site Name	80 Brook Way
Hole Location	TP01

TP01 Dimensions



TP01	
Soakage Test 1	
Time (Minutes)	Depth (m bgl)
0	0.97
0.5	0.98
1	0.99
2	1.00
3	1.005
4	1.005
5	1.01
6	1.015
8	1.02
10	1.03
15	1.05
20	1.06
30	1.09
60	1.16
90	1.23
120	1.27
150	1.30
180	1.34
210	1.40
240	1.43
270	1.46
300	1.49
330	1.51

N.B: 1200 litres was used for the test

Appendix D

General Limitations and Exceptions

General Limitations and Exceptions

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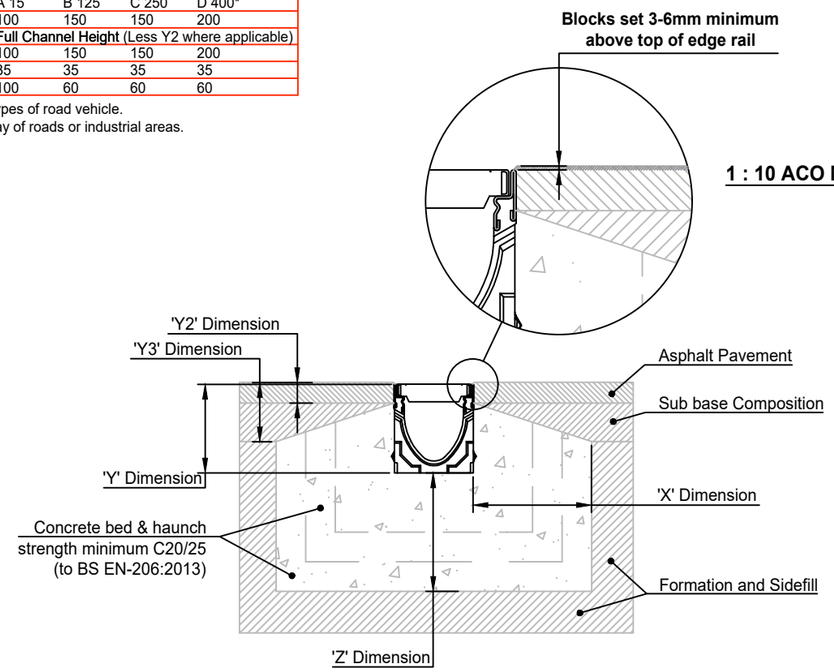
18. It should be noted that the Made Ground depth recorded above is that encountered within the trial pits undertaken during the phase of work to which this report pertains. Owing to the variable nature and unknown deposition criteria of Made Ground it is possible that deeper or more extensive areas of Made Ground may exist at this site which have not been revealed by the current work.

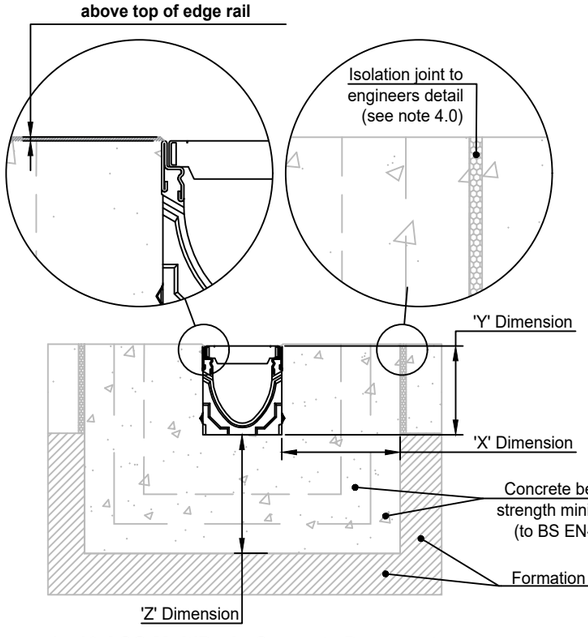
19. Should the proposed end use or site layout change then a reassessment of potential risks will be required.

Load Class		A 15	B 125	C 250	D 400*
Minimum Dimensions (mm)	X	100	150	150	200
	Y	Full Channel Height (Less Y2 where applicable)			
	Z	100	150	150	200
Maximum Dimensions (mm)	Y2	35	35	35	35
	Y3	100	60	60	60

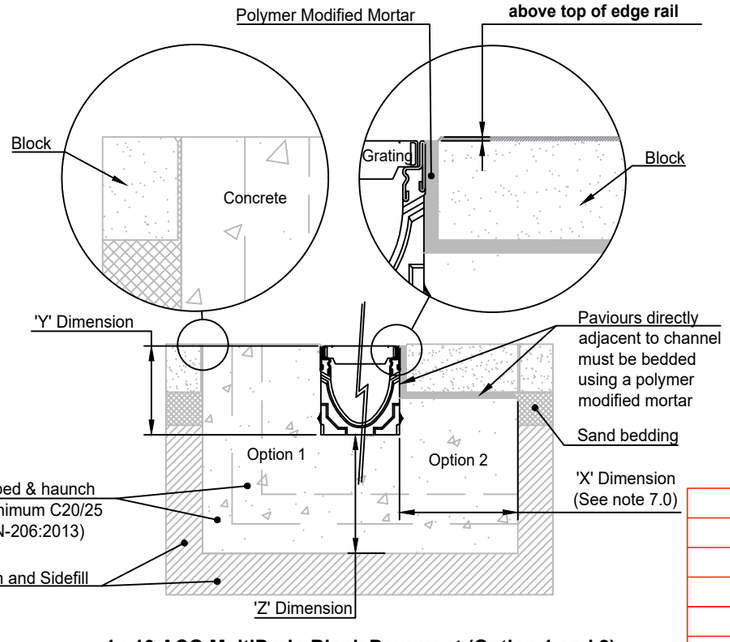
* e.g. parking areas for all types of road vehicle.
Not suitable for carriageway of roads or industrial areas.



1 : 10 ACO MultiDrain Asphalt Pavement



1 : 10 ACO MultiDrain Concrete Pavement



1 : 10 ACO MultiDrain Block Pavement (Option 1 and 2)

NBS Specification:
ACO MultiDrain® MD should be specified in section Q10:180. Assistance in completing this clause can be found in ACO Technologies product entries in NBS Plus, or a model specification can be downloaded from www.aco.co.uk. For further assistance, contact the ACO Water Management Design Services Team.

Best Practice and Workmanship:
ACO can give guidance with respect to the most suitable methods of installation for each of the products in the ACO MultiDrain® MD range. ACO MultiDrain® MD should be installed using levels of workmanship that accord with the National Code of Practice (UK: BS8000-0:2014) and in keeping with BS EN 1433:2002 (Drainage channels for vehicular and pedestrian areas).

Detailed installation statements and methodologies will vary for all sites as each will have different aspects deserving particular consideration, consequently the relevant approvals should be sought from the consulting engineer and/or the installer.

1.0 Load Class
Installation recommendations shown are ACO minimum recommendations for BS EN 1433:2002 load class requirements.

2.0 Ground Conditions
The long term performance of a channel installation to sustain vertical and lateral loads depends upon A) ground conditions B) stability of the adjacent pavement and C) a durable concrete bed and surround. The recommended installation detail may require the minimum dimensions to be revised to achieve site specific load class requirements (referred to in 1.0 above).

3.0 Cutting and Jointing
Mitre joints are formed by cutting the channels to the required angle and butting them together with appropriate sealant (e.g. Sikaflex 11FC or similar) or ACO Repair Kit. Where possible 90° joints and T's should be formed so that gratings do not have to be cut. Angles can be formed by connecting them using proprietary PVCu pipework attached to ACO inlet/outlet endcaps. For further details please contact ACO Design Services Team.
Note: For Load Classes higher than C 250, mitred joints are not recommended in vehicular areas. Where requested ACO can custom manufacture angled junctions to order.

4.0 Isolation Joints
The channel must be isolated from the surrounding environment. An isolation joint must be positioned up to 1500mm from the channel wall. Any dowel bars must be located no nearer than 150mm from the channel wall. Other isolation joints in surrounding slab must be continued through the channel. Additional crack control may be required to comply with specifier requirements.

5.0 Installation into in-situ Slab
Where a channel is to be installed into an existing concrete slab it is necessary to cut a suitably sized pocket in the slab. The channel will then need to be bedded in polymer modified mortar of 25mm minimum thickness (this may vary depending on the type of mortar used). Engineering advice may be necessary.

6.0 Temporary Installation
A channel installation is not complete until the final surfacing is laid. In any temporary condition, i.e. with the channel walls projecting above adjacent ground, site traffic should not cross channels. Loose boards, stone fill or cover plates will not protect the channel walls or grating. A temporary channel crossing should be formed by raising the ground level locally, to 3 - 6mm above top of edge rail, either side of a channel for a distance of 750 to 1000mm, to form ramps. Note that the channel load class should be adequate to carry the site traffic.

7.0 Block Pavements
The channel must be supported laterally. Blocks laid directly against a channel must be laid as a soldier course and restrained from movement by bedding securely on the concrete haunch e.g. by using a polymer modified mortar for bed and perpendicular joints (e.g. RONAFIX mortar mix C or similar). Blocks or slabs bedded on sand remote from the channel should be set at a higher level to compensate for possible settlement of the paving in service.

8.0 Grate Locking System
Gratings should be securely fixed to the channel, where required, using an appropriate grate lock system (where available).

9.0 Channel Protection
Avoid contact between compaction equipment and top of ACO channel edge rail. The installer must ensure that the finished surface level lies above the top of the edge rail (by at least 3-6mm). Covering or protecting the grating, before concreting the haunch or laying blocks, removes the time and cost associated with cleaning the channel and grating of cement material and embedded stones. (Please note that ACO channels must be installed with the grating in place to prevent deformation of the channel).

10.0 Watertight Installation to BS EN 1433:2002
Where ACO channel joints/fittings and channel/pavement interfaces are to be sealed, an appropriate sealant should be used (e.g. Sikaflex 11FC or similar). Guidance on the necessary surface preparation and/or priming should be sought from the sealant manufacturer.

For Guidance a typical method of application follows:
- The end faces of the channels are to be sound and free from dust, oil, and grease, with any loose material or dirt removed, e.g. by mechanical wire brush. No water drops should be evident.
- Using a standard cartridge gun, apply the sealant evenly and with no flaws. The detail on the ends of a channel varies from one product to another:
- Products with a basically flat face - apply the sealant in a layer approximately 5mm thick to one face of the joint.
- Products with a sealing groove within the end face - apply the sealant in a bead of approximately 10mm diameter into the sealing groove.
- Products with a sealing groove following the inside shape of the channel - apply the sealant to the end face of the channel and to the sealant groove, such that when the joint is completed, the sealant will both cover the end face and fill the groove.
- The channel unit should be placed on the prepared concrete bedding and pressed against the previously placed channel unit. A sealed joint of approximately 1-2mm width should be formed between adjacent channel units.
- Excess sealant should be wiped from the inside face of the channel to leave a smooth finish.
- The sealant is to be left to cure for 24 hours, during which time the sealant should be kept as dry as possible.

Note: Galvanised steel and iron products have good corrosion resistance to concrete and mortar products but may experience corrosion if high chloride and/or sulphate content is present. Use only good quality concrete and consider using corrosion inhibitors where necessary. The use of protective coatings, such as paint, can minimise the risk of corrosion.

Version	Date	Description	Name
F	24.6.2016	Updated title block	TS
E	18.4.2016	Revised to comments 12/04/16	TS
D	24.3.2016	Revised to comments 15/03/16	TS
C	2.3.2016	General revisions	TS

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Drawing Number: 21819
Revision: F

Title: ACO MULTIDRAIN M100D/DS 0.0 CHANNEL INSTALLATION DETAIL DRAWING

Created by: IM	Released by: TS	Projection: ISO-A	Units: mm	Format: A3
Created at: 8.12.2015	Released at: 24.6.2016			Scale: 1 : 10
Replacement for: E1-E01-036-3-c	Replaced by:	Information contained in this drawing is copyright property of ACO Technologies plc. Any reproduction in part or whole without written permission of ACO Technologies plc is prohibited		Sheet: 1 of 1

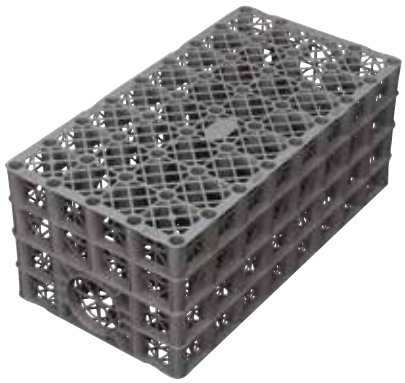
Polystorm Modular Cell

Data Sheet

PRODUCT INFORMATION | **ISSUE 3 - JAN 2016**

Product code: PSM1

The Polystorm cell made of virgin material, has a 44 tonnes/m² compressive strength. It is ideally suited for retention, attenuation or infiltration under trafficked or loaded areas at greater depths, such as car parks, housing and commercial developments.
An efficient and versatile solution for SuDS compliance, it is hard-wearing, lightweight and provides a 95% void ratio for maximum water capture.



Key Benefits

- Compressive strength of 44 tonnes/m²
- Ideal for retention, attenuation or infiltration applications with a suitable geomembrane or geotextile
- Designed for trafficked and loaded conditions
- BBA approved
- Visual and maintenance access can be achieved when used in conjunction with Polystorm Access & Inspect
- Can be used as part of a value engineered hybrid system with Polystorm Xtra & Polystorm Lite
- Integrated inlet and outlet
- 3D flow throughout the structure
- 95% void ratio
- 100% recyclable
- 50 years creep limited life expectancy

Technical Support

Detailed guidance and assistance is available.
For further information, please contact our Technical Team on **+44 (0) 1509 615100** or email **civils@polypipe.com**

BBA BRITISH BOARD OF AGREMENT
CERTIFICATE No. 06/4297

ELEMENT	VALUE
PHYSICAL PROPERTIES	
Length	1m
Width	0.5m
Depth	0.4m
Total volume	0.2m³
Unit weight	9kg
Unit storage volume	0.19m³ (190 litres)
Void ratio	95%
SHORT TERM COMPRESSIVE STRENGTH	
Vertical	Maximum 440kN/m² **
Lateral	Maximum 63kN/m² **
SHORT TERM DEFLECTION	
Vertical	83kN/m² per mm
Lateral	4.2kN/m² per mm
OTHER PROPERTIES	
Maximum burial depths:	
Light trafficked	3.7m***
Non-trafficked	3.8m***

* Each unit includes 4 Clips and 2 Shear Connectors.

** Compressive strength at yield, maximum recommended value for design purposes.

*** Based on ground conditions being dense sand and gravel with no groundwater present using the calculation methodology detailed within CIRIA C680 (2008). Where ground conditions differ please consult our water management solutions technical department on +44 (0) 1509 615100.

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Polypipe

N

Assumed alignment
of Highway Surface
Water Sewer

Approved S185 Diversion

Existing Southern Water
Manhole
Number: 6305

6305
CL: 5.53
IL: 4.03 (TBC)

F3
CL: 5.40 (TBC)
IL: 4.18 (TBC)

F2
CL: 5.40 (TBC)
IL: 4.20 (TBC)

F1
CL: 5.40 (TBC)
IL: 4.25 (TBC)

Existing garage to be
removed

RE

Existing Manhole (EM)
CL: 5.40 (TBC)
IL: 4.28 (TBC)

Assumed Existing
Highway Surface
Water Manhole
CL: 5.50 (Assumed)
IL: 4.15 (Assumed)

Levels to be
checked on site

Connection subject
to permission from
the Highway
Authority.

S2
CL: 5.40 (TBC)
IL: 4.274

FFL: 5.55 (TBC)

S1
CL: 5.40 (TBC)
IL: 4.348

STORAGE
CL: 5.40
IL: 4.40

Attenuation Crates
1m x 2.0m x 0.4m

Linear Drainage

Assumed alignment
of Highway Surface
Water Sewer

SCALE 1:1000
0m 20m 40m 60m 80m

General Notes

KEY:

- Application Site Boundary
- Surface Water Drain
- Assumed Highway Surface Water Sewer
- Foul Water Drain
- Existing Foul Water Drain
- Linear Drainage
- Pipe Protection
- SW Rising Main
- FW Rising Main
- French Drain/Perforated Pipe
- Surface Catch Pit/Manhole
- Foul Water Manhole
- Surface Water Attenuation Crates
- Gully & Lead
- Waste Water Package Treatment Plant
- 1.2m Retaining Wall
- +153.100 Spot Levels
- Direction of Flow
- Embankment
- Brick Headwall
- Roof Catchment Area 43m2
- Driveway Catchment Area 13m2

FOR PLANNING

No.	Revision/Issue	Date

RSPD
Roads & Sewers for Planning & Design Ltd
www.roadsandsewers.co.uk 07876 573377

Project Name and Address
80 BROOK WAY,
LANCING,
WEST SUSSEX, BN15 8DH

Description
DRAINAGE STRATEGY

Project	Sheet
5734	01
Date: 15/03/2023	
Scale: 1:1000 @ A1	

Design Settings

Rainfall Methodology	FEH-13	Maximum Time of Concentration (mins)	30.00	Preferred Cover Depth (m)	0.350
Return Period (years)	2	Maximum Rainfall (mm/hr)	50.0	Include Intermediate Ground	✓
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00	Enforce best practice design rules	✓
CV	0.750	Connection Type	Level Soffits		
Time of Entry (mins)	30.00	Minimum Backdrop Height (m)	0.200		

Adoptable Manhole Type

Max Width (mm)	Diameter (mm)	Max Width (mm)	Diameter (mm)	Max Width (mm)	Diameter (mm)	Max Width (mm)	Diameter (mm)
374	1200	499	1350	749	1500	900	1800

>900 Link+900 mm

Max Depth (m)	Diameter (mm)	Max Depth (m)	Diameter (mm)
1.500	1050	99.999	1200

Circular Link Type

Shape	Circular	Barrels	1	Auto Increment (mm)	75	Follow Ground	x

Available Diameters (mm)

100 | 150

Nodes

	Name	Area (ha)	T of E (mins)	Cover Level (m)	Node Type	Manhole Type	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
✓	S1	0.001	30.00	5.400	Manhole	Adoptable	450	1935.590	1569.090	1.052
✓	S2	0.004		5.400	Manhole	Adoptable	450	1933.100	1572.660	1.126
✓	STORAGE		30.00	5.400	Manhole	Adoptable	1200	1938.310	1567.640	1.000

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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)	Link Type	T of C (mins)	Rain (mm/hr)
?	1.001	S1	S2	4.353	0.600	4.348	4.274	0.074	58.8	100	Circular	30.00	20.7
?	1.000	STORAGE	S1	3.082	0.600	4.400	4.348	0.052	59.3	100	Circular	30.00	20.7

	Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Minimum Depth (m)	Maximum Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
?	1.001	S1	S2	1.006	7.9	0.1	0.952	1.026	0.952	1.026	0.001	0.0	6	0.268
?	1.000	STORAGE	S1	1.002	7.9	0.0	0.900	0.952	0.900	0.952	0.000	0.0	0	0.000

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.001	4.353	58.8	100	Circular	5.400	4.348	0.952	5.400	4.274	1.026
1.000	3.082	59.3	100	Circular	5.400	4.400	0.900	5.400	4.348	0.952

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.001	S1	450	Manhole	Adoptable	S2	450	Manhole	Adoptable
1.000	STORAGE	1200	Manhole	Adoptable	S1	450	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	MH Type	Connections	Link	IL (m)	Dia (mm)	Link Type
S1	1935.590	1569.090	5.400	1.052	450	Manhole	Adoptable	1	1.000	4.348	100	Circular
												
								0	1.001	4.348	100	Circular
S2	1933.100	1572.660	5.400	1.126	450	Manhole	Adoptable	1	1.001	4.274	100	Circular
												

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Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	MH Type	Connections	Link	IL (m)	Dia (mm)	Link Type
STORAGE	1938.310	1567.640	5.400	1.000	1200	Manhole	Adoptable					
								0	1.000	4.400	100	Circular

Simulation Settings

Rainfall Methodology	FEH-13	Analysis Speed	Normal	Additional Storage (m³/ha)	20.0
Summer CV	0.750	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	0.840	Drain Down Time (mins)	240	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 %)	Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0	100	20	0	0
30	0	0	0	100	40	0	0
100	0	0	0				

Node S2 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.274	Design Flow (l/s)	0.5	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Design Depth (m)	0.826	Diameter (m)	0.016		

Node STORAGE Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	4.400
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	34

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Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	2.0	0.0	0.400	2.0	0.0	0.401	0.0	0.0

Other (defaults)

Entry Loss (manhole)	0.250	Entry Loss (junction)	0.000	Apply Recommended Losses	x
Exit Loss (manhole)	0.250	Exit Loss (junction)	0.000	Flood Risk (m)	0.300

Approval Settings

Node Size	✓	Maximum Cover Depth (m)	3.000	Surcharged Depth	✓
Node Losses	✓	Backdrops	✓	Return Period (years)	
Link Size	✓	Minimum Backdrop Height (m)		Maximum Surcharged Depth (m)	0.100
Minimum Diameter (mm)	150	Maximum Backdrop Height (m)	1.500	Flooding	✓
Link Length	✓	Full Bore Velocity	✓	Return Period (years)	30
Maximum Length (m)	100.000	Minimum Full Bore Velocity (m/s)		Time to Half Empty	x
Coordinates	✓	Maximum Full Bore Velocity (m/s)	3.000	Discharge Rates	✓
Accuracy (m)	1.000	Proportional Velocity	✓	Discharge Volume	✓
Crossings	✓	Return Period (years)		100 year 360 minute (m³)	
Cover Depth	✓	Minimum Proportional Velocity (m/s)	0.750		
Minimum Cover Depth (m)		Maximum Proportional Velocity (m/s)	3.000		

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
2 year 15 minute summer	112.257	31.765	2 year 180 minute winter	18.796	7.441
2 year 15 minute winter	78.777	31.765	2 year 240 minute summer	23.508	6.212
2 year 30 minute summer	73.092	20.682	2 year 240 minute winter	15.618	6.212
2 year 30 minute winter	51.293	20.682	2 year 360 minute summer	18.302	4.710
2 year 60 minute summer	49.348	13.041	2 year 360 minute winter	11.897	4.710
2 year 60 minute winter	32.786	13.041	2 year 480 minute summer	14.455	3.820
2 year 120 minute summer	35.504	9.383	2 year 480 minute winter	9.604	3.820
2 year 120 minute winter	23.588	9.383	2 year 600 minute summer	11.820	3.233
2 year 180 minute summer	28.916	7.441	2 year 600 minute winter	8.076	3.233

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Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
2 year 720 minute summer	10.503	2.815	100 year 30 minute summer	259.309	73.375
2 year 720 minute winter	7.058	2.815	100 year 30 minute winter	181.971	73.375
2 year 960 minute summer	8.573	2.257	100 year 60 minute summer	178.232	47.102
2 year 960 minute winter	5.679	2.257	100 year 60 minute winter	118.413	47.102
2 year 1440 minute summer	6.172	1.654	100 year 120 minute summer	107.984	28.537
2 year 1440 minute winter	4.148	1.654	100 year 120 minute winter	71.742	28.537
30 year 15 minute summer	303.626	85.916	100 year 180 minute summer	81.942	21.086
30 year 15 minute winter	213.071	85.916	100 year 180 minute winter	53.264	21.086
30 year 30 minute summer	202.137	57.198	100 year 240 minute summer	64.059	16.929
30 year 30 minute winter	141.851	57.198	100 year 240 minute winter	42.559	16.929
30 year 60 minute summer	138.056	36.484	100 year 360 minute summer	47.879	12.321
30 year 60 minute winter	91.721	36.484	100 year 360 minute winter	31.123	12.321
30 year 120 minute summer	85.464	22.586	100 year 480 minute summer	37.019	9.783
30 year 120 minute winter	56.780	22.586	100 year 480 minute winter	24.594	9.783
30 year 180 minute summer	65.399	16.830	100 year 600 minute summer	29.834	8.160
30 year 180 minute winter	42.511	16.830	100 year 600 minute winter	20.384	8.160
30 year 240 minute summer	51.314	13.561	100 year 720 minute summer	26.217	7.026
30 year 240 minute winter	34.092	13.561	100 year 720 minute winter	17.620	7.026
30 year 360 minute summer	38.410	9.884	100 year 960 minute summer	21.025	5.536
30 year 360 minute winter	24.968	9.884	100 year 960 minute winter	13.927	5.536
30 year 480 minute summer	29.673	7.842	100 year 1440 minute summer	14.736	3.949
30 year 480 minute winter	19.714	7.842	100 year 1440 minute winter	9.904	3.949
30 year 600 minute summer	23.892	6.535	100 year +20% CC 15 minute summer	462.887	130.981
30 year 600 minute winter	16.325	6.535	100 year +20% CC 15 minute winter	324.833	130.981
30 year 720 minute summer	20.980	5.623	100 year +20% CC 30 minute summer	311.170	88.050
30 year 720 minute winter	14.100	5.623	100 year +20% CC 30 minute winter	218.365	88.050
30 year 960 minute summer	16.815	4.428	100 year +20% CC 60 minute summer	213.879	56.522
30 year 960 minute winter	11.138	4.428	100 year +20% CC 60 minute winter	142.096	56.522
30 year 1440 minute summer	11.789	3.160	100 year +20% CC 120 minute summer	129.581	34.244
30 year 1440 minute winter	7.923	3.160	100 year +20% CC 120 minute winter	86.091	34.244
100 year 15 minute summer	385.739	109.151	100 year +20% CC 180 minute summer	98.330	25.304
100 year 15 minute winter	270.694	109.151	100 year +20% CC 180 minute winter	63.917	25.304

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Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
100 year +20% CC 240 minute summer	76.870	20.315	100 year +40% CC 60 minute winter	165.779	65.942
100 year +20% CC 240 minute winter	51.071	20.315	100 year +40% CC 120 minute summer	151.178	39.952
100 year +20% CC 360 minute summer	57.455	14.785	100 year +40% CC 120 minute winter	100.439	39.952
100 year +20% CC 360 minute winter	37.347	14.785	100 year +40% CC 180 minute summer	114.718	29.521
100 year +20% CC 480 minute summer	44.422	11.739	100 year +40% CC 180 minute winter	74.570	29.521
100 year +20% CC 480 minute winter	29.513	11.739	100 year +40% CC 240 minute summer	89.682	23.700
100 year +20% CC 600 minute summer	35.801	9.792	100 year +40% CC 240 minute winter	59.583	23.700
100 year +20% CC 600 minute winter	24.461	9.792	100 year +40% CC 360 minute summer	67.031	17.249
100 year +20% CC 720 minute summer	31.461	8.432	100 year +40% CC 360 minute winter	43.572	17.249
100 year +20% CC 720 minute winter	21.144	8.432	100 year +40% CC 480 minute summer	51.826	13.696
100 year +20% CC 960 minute summer	25.230	6.644	100 year +40% CC 480 minute winter	34.432	13.696
100 year +20% CC 960 minute winter	16.713	6.644	100 year +40% CC 600 minute summer	41.767	11.424
100 year +20% CC 1440 minute summer	17.683	4.739	100 year +40% CC 600 minute winter	28.538	11.424
100 year +20% CC 1440 minute winter	11.884	4.739	100 year +40% CC 720 minute summer	36.704	9.837
100 year +40% CC 15 minute summer	540.035	152.811	100 year +40% CC 720 minute winter	24.667	9.837
100 year +40% CC 15 minute winter	378.972	152.811	100 year +40% CC 960 minute summer	29.435	7.751
100 year +40% CC 30 minute summer	363.032	102.726	100 year +40% CC 960 minute winter	19.498	7.751
100 year +40% CC 30 minute winter	254.759	102.726	100 year +40% CC 1440 minute summer	20.630	5.529
100 year +40% CC 60 minute summer	249.525	65.942	100 year +40% CC 1440 minute winter	13.865	5.529

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Results for 2 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute winter	S1	88	4.371	0.023	0.0	0.0040	0.0000	OK
120 minute winter	S2	88	4.371	0.097	0.2	0.0222	0.0000	OK
15 minute summer	STORAGE	1	4.400	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)
120 minute winter	S1	1.001	S2	0.0	-0.010	0.004	0.0197	
120 minute winter	S2	Orifice		0.2				0.6
15 minute summer	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 30 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute winter	S1	100	4.511	0.163	0.3	0.0291	0.0000	SURCHARGED
120 minute winter	S2	100	4.511	0.237	0.5	0.0546	0.0000	OK
120 minute winter	STORAGE	100	4.511	0.111	0.2	0.3377	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute winter	S1	1.001	S2	-0.2	0.027	-0.027	0.0341	
120 minute winter	S2	Orifice		0.3				1.8
120 minute winter	STORAGE	1.000	S1	-0.2	-0.082	-0.029	0.0241	

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Results for 100 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute winter	S1	67	4.589	0.241	0.6	0.0430	0.0000	SURCHARGED
60 minute winter	S2	67	4.589	0.315	0.7	0.0725	0.0000	OK
60 minute winter	STORAGE	67	4.589	0.189	0.4	0.5743	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute winter	S1	1.001	S2	-0.4	-0.046	-0.045	0.0341	
60 minute winter	S2	Orifice		0.3				2.0
60 minute winter	STORAGE	1.000	S1	-0.4	-0.127	-0.053	0.0241	

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Results for 100 year +20% CC Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute winter	S1	68	4.646	0.298	0.6	0.0531	0.0000	SURCHARGED
60 minute winter	S2	68	4.646	0.372	0.8	0.0856	0.0000	OK
60 minute winter	STORAGE	68	4.646	0.246	0.5	0.7464	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute winter	S1	1.001	S2	-0.4	-0.055	-0.055	0.0341	
60 minute winter	S2	Orifice		0.3				2.3
60 minute winter	STORAGE	1.000	S1	-0.5	-0.146	-0.061	0.0241	

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Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute winter	S1	69	4.708	0.360	0.8	0.0641	0.0000	SURCHARGED
60 minute winter	S2	68	4.708	0.434	1.0	0.0998	0.0000	OK
60 minute winter	STORAGE	69	4.708	0.308	0.6	0.9339	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute winter	S1	1.001	S2	-0.6	-0.071	-0.070	0.0341	
60 minute winter	S2	Orifice		0.3				2.7
60 minute winter	STORAGE	1.000	S1	-0.6	-0.157	-0.072	0.0241	

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Results for 2 year 15 minute summer. 255 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S1	1	4.348	0.000	0.0	0.0000	0.0000	OK
15 minute summer	S2	38	4.314	0.040	0.1	0.0092	0.0000	OK
15 minute summer	STORAGE	1	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S1	1.001	S2	0.0	0.000	0.000	0.0064	
15 minute summer	S2	Orifice		0.1				0.2
15 minute summer	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 2 year 15 minute winter. 255 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S1	1	4.348	0.000	0.0	0.0000	0.0000	OK
15 minute winter	S2	38	4.314	0.040	0.1	0.0092	0.0000	OK
15 minute winter	STORAGE	1	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	S1	1.001	S2	0.0	0.000	0.000	0.0064	
15 minute winter	S2	Orifice		0.1				0.2
15 minute winter	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 2 year 30 minute summer. 270 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	S1	40	4.359	0.011	0.0	0.0019	0.0000	OK
30 minute summer	S2	40	4.359	0.085	0.2	0.0195	0.0000	OK
30 minute summer	STORAGE	1	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	S1	1.001	S2	0.0	-0.016	-0.005	0.0164	
30 minute summer	S2	Orifice		0.1				0.3
30 minute summer	STORAGE	1.000	S1	0.0	0.000	0.000	0.0007	

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Results for 2 year 30 minute winter. 270 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute winter	S1	41	4.363	0.015	0.0	0.0027	0.0000	OK
30 minute winter	S2	41	4.363	0.089	0.2	0.0205	0.0000	OK
30 minute winter	STORAGE	1	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute winter	S1	1.001	S2	0.1	0.017	0.007	0.0177	
30 minute winter	S2	Orifice		0.2				0.4
30 minute winter	STORAGE	1.000	S1	0.0	0.000	0.000	0.0012	

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Results for 2 year 60 minute summer. 300 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S1	55	4.362	0.014	0.0	0.0025	0.0000	OK
60 minute summer	S2	55	4.362	0.088	0.2	0.0202	0.0000	OK
60 minute summer	STORAGE	1	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S1	1.001	S2	0.0	-0.011	-0.004	0.0173	
60 minute summer	S2	Orifice		0.2				0.4
60 minute summer	STORAGE	1.000	S1	0.0	0.000	0.000	0.0010	

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Results for 2 year 60 minute winter. 300 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute winter	S1	56	4.365	0.017	0.0	0.0029	0.0000	OK
60 minute winter	S2	56	4.365	0.091	0.2	0.0208	0.0000	OK
60 minute winter	STORAGE	1	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute winter	S1	1.001	S2	0.0	-0.015	-0.005	0.0181	
60 minute winter	S2	Orifice		0.2				0.4
60 minute winter	STORAGE	1.000	S1	0.0	0.000	0.000	0.0013	

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Results for 2 year 120 minute summer. 360 minute analysis at 2 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute summer	S1	86	4.366	0.018	0.0	0.0032	0.0000	OK
120 minute summer	S2	86	4.366	0.092	0.2	0.0211	0.0000	OK
120 minute summer	STORAGE	2	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute summer	S1	1.001	S2	0.0	-0.012	0.005	0.0184	
120 minute summer	S2	Orifice		0.2				0.5
120 minute summer	STORAGE	1.000	S1	0.0	0.000	0.000	0.0014	

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Results for 2 year 120 minute winter. 360 minute analysis at 2 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute winter	S1	88	4.371	0.023	0.0	0.0040	0.0000	OK
120 minute winter	S2	88	4.371	0.097	0.2	0.0222	0.0000	OK
120 minute winter	STORAGE	2	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute winter	S1	1.001	S2	0.0	-0.010	0.004	0.0197	
120 minute winter	S2	Orifice		0.2				0.6
120 minute winter	STORAGE	1.000	S1	0.0	0.000	0.000	0.0020	

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Results for 2 year 180 minute summer. 420 minute analysis at 4 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute summer	S1	116	4.365	0.017	0.0	0.0031	0.0000	OK
180 minute summer	S2	116	4.365	0.091	0.2	0.0210	0.0000	OK
180 minute summer	STORAGE	4	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
180 minute summer	S1	1.001	S2	0.0	-0.011	-0.004	0.0183	
180 minute summer	S2	Orifice		0.2				0.6
180 minute summer	STORAGE	1.000	S1	0.0	0.000	0.000	0.0014	

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Results for 2 year 180 minute winter. 420 minute analysis at 4 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute winter	S1	116	4.357	0.009	0.0	0.0015	0.0000	OK
180 minute winter	S2	116	4.357	0.083	0.2	0.0190	0.0000	OK
180 minute winter	STORAGE	4	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
180 minute winter	S1	1.001	S2	0.0	-0.011	-0.004	0.0158	
180 minute winter	S2	Orifice		0.1				0.6
180 minute winter	STORAGE	1.000	S1	0.0	0.000	0.000	0.0005	

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Results for 2 year 240 minute summer. 480 minute analysis at 4 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute summer	S1	144	4.361	0.013	0.0	0.0023	0.0000	OK
240 minute summer	S2	144	4.361	0.087	0.2	0.0200	0.0000	OK
240 minute summer	STORAGE	4	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute summer	S1	1.001	S2	0.0	-0.012	-0.004	0.0170	
240 minute summer	S2	Orifice		0.2				0.6
240 minute summer	STORAGE	1.000	S1	0.0	0.000	0.000	0.0009	

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Results for 2 year 240 minute winter. 480 minute analysis at 4 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	S1	4	4.348	0.000	0.0	0.0000	0.0000	OK
240 minute winter	S2	184	4.317	0.043	0.1	0.0099	0.0000	OK
240 minute winter	STORAGE	4	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute winter	S1	1.001	S2	0.0	0.000	0.000	0.0070	
240 minute winter	S2	Orifice		0.1				0.6
240 minute winter	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 2 year 360 minute summer. 600 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute summer	S1	8	4.348	0.000	0.0	0.0000	0.0000	OK
360 minute summer	S2	240	4.317	0.043	0.1	0.0099	0.0000	OK
360 minute summer	STORAGE	8	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute summer	S1	1.001	S2	0.0	0.000	0.000	0.0070	
360 minute summer	S2	Orifice		0.1				0.6
360 minute summer	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 2 year 360 minute winter. 600 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	S1	8	4.348	0.000	0.0	0.0000	0.0000	OK
360 minute winter	S2	256	4.317	0.043	0.1	0.0099	0.0000	OK
360 minute winter	STORAGE	8	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute winter	S1	1.001	S2	0.0	0.000	0.000	0.0070	
360 minute winter	S2	Orifice		0.1				0.8
360 minute winter	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 2 year 480 minute summer. 720 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute summer	S1	8	4.348	0.000	0.0	0.0000	0.0000	OK
480 minute summer	S2	304	4.317	0.043	0.1	0.0099	0.0000	OK
480 minute summer	STORAGE	8	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute summer	S1	1.001	S2	0.0	0.000	0.000	0.0070	
480 minute summer	S2	Orifice		0.1				0.6
480 minute summer	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 2 year 480 minute winter. 720 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	S1	8	4.348	0.000	0.0	0.0000	0.0000	OK
480 minute winter	S2	320	4.317	0.043	0.1	0.0099	0.0000	OK
480 minute winter	STORAGE	8	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute winter	S1	1.001	S2	0.0	0.000	0.000	0.0070	
480 minute winter	S2	Orifice		0.1				0.8
480 minute winter	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 2 year 600 minute summer. 840 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute summer	S1	15	4.348	0.000	0.0	0.0000	0.0000	OK
600 minute summer	S2	360	4.317	0.043	0.1	0.0099	0.0000	OK
600 minute summer	STORAGE	15	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
600 minute summer	S1	1.001	S2	0.0	0.000	0.000	0.0070	
600 minute summer	S2	Orifice		0.1				0.6
600 minute summer	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 2 year 600 minute winter. 840 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute winter	S1	15	4.348	0.000	0.0	0.0000	0.0000	OK
600 minute winter	S2	375	4.317	0.043	0.1	0.0099	0.0000	OK
600 minute winter	STORAGE	15	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
600 minute winter	S1	1.001	S2	0.0	0.000	0.000	0.0070	
600 minute winter	S2	Orifice		0.1				0.8
600 minute winter	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 2 year 720 minute summer. 960 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute summer	S1	15	4.348	0.000	0.0	0.0000	0.0000	OK
720 minute summer	S2	420	4.317	0.043	0.1	0.0099	0.0000	OK
720 minute summer	STORAGE	15	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
720 minute summer	S1	1.001	S2	0.0	0.000	0.000	0.0070	
720 minute summer	S2	Orifice		0.1				0.6
720 minute summer	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 2 year 720 minute winter. 960 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute winter	S1	15	4.348	0.000	0.0	0.0000	0.0000	OK
720 minute winter	S2	435	4.317	0.043	0.1	0.0099	0.0000	OK
720 minute winter	STORAGE	15	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
720 minute winter	S1	1.001	S2	0.0	0.000	0.000	0.0070	
720 minute winter	S2	Orifice		0.1				0.8
720 minute winter	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 2 year 960 minute summer. 1200 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute summer	S1	15	4.348	0.000	0.0	0.0000	0.0000	OK
960 minute summer	S2	540	4.317	0.043	0.1	0.0099	0.0000	OK
960 minute summer	STORAGE	15	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
960 minute summer	S1	1.001	S2	0.0	0.000	0.000	0.0070	
960 minute summer	S2	Orifice		0.1				0.6
960 minute summer	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 2 year 960 minute winter. 1200 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute winter	S1	15	4.348	0.000	0.0	0.0000	0.0000	OK
960 minute winter	S2	525	4.317	0.043	0.1	0.0098	0.0000	OK
960 minute winter	STORAGE	15	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
960 minute winter	S1	1.001	S2	0.0	0.000	0.000	0.0070	
960 minute winter	S2	Orifice		0.1				0.5
960 minute winter	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 2 year 1440 minute summer. 1680 minute analysis at 30 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute summer	S1	30	4.348	0.000	0.0	0.0000	0.0000	OK
1440 minute summer	S2	750	4.315	0.041	0.1	0.0095	0.0000	OK
1440 minute summer	STORAGE	30	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute summer	S1	1.001	S2	0.0	0.000	0.000	0.0067	
1440 minute summer	S2	Orifice		0.1				0.3
1440 minute summer	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 2 year 1440 minute winter. 1680 minute analysis at 30 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute winter	S1	30	4.348	0.000	0.0	0.0000	0.0000	OK
1440 minute winter	S2	30	4.274	0.000	0.0	0.0000	0.0000	OK
1440 minute winter	STORAGE	30	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute winter	S1	1.001	S2	0.0	0.000	0.000	0.0000	
1440 minute winter	S2	Orifice		0.0				0.0
1440 minute winter	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 30 year 15 minute summer. 255 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S1	37	4.452	0.104	0.3	0.0185	0.0000	SURCHARGED
15 minute summer	S2	37	4.452	0.178	0.4	0.0409	0.0000	OK
15 minute summer	STORAGE	37	4.452	0.052	0.2	0.1571	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S1	1.001	S2	0.2	0.061	0.022	0.0341	
15 minute summer	S2	Orifice		0.2				0.8
15 minute summer	STORAGE	1.000	S1	-0.2	-0.096	-0.029	0.0184	

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Results for 30 year 15 minute winter. 255 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S1	38	4.461	0.113	0.3	0.0200	0.0000	SURCHARGED
15 minute winter	S2	38	4.461	0.187	0.5	0.0429	0.0000	OK
15 minute winter	STORAGE	38	4.461	0.061	0.2	0.1836	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	S1	1.001	S2	-0.2	0.052	-0.023	0.0341	
15 minute winter	S2	Orifice		0.2				0.9
15 minute winter	STORAGE	1.000	S1	-0.2	-0.094	-0.029	0.0197	

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Results for 30 year 30 minute summer. 270 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	S1	46	4.474	0.126	0.4	0.0224	0.0000	SURCHARGED
30 minute summer	S2	46	4.474	0.200	0.5	0.0460	0.0000	OK
30 minute summer	STORAGE	46	4.474	0.074	0.3	0.2244	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	S1	1.001	S2	-0.3	-0.048	-0.032	0.0341	
30 minute summer	S2	Orifice		0.2				1.0
30 minute summer	STORAGE	1.000	S1	-0.3	-0.107	-0.037	0.0216	

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Results for 30 year 30 minute winter. 270 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute winter	S1	47	4.490	0.142	0.4	0.0253	0.0000	SURCHARGED
30 minute winter	S2	47	4.490	0.216	0.5	0.0498	0.0000	OK
30 minute winter	STORAGE	47	4.490	0.090	0.3	0.2733	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute winter	S1	1.001	S2	-0.3	0.044	-0.034	0.0341	
30 minute winter	S2	Orifice		0.2				1.1
30 minute winter	STORAGE	1.000	S1	-0.3	-0.116	-0.039	0.0235	

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Results for 30 year 60 minute summer. 300 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S1	64	4.496	0.148	0.4	0.0264	0.0000	SURCHARGED
60 minute summer	S2	64	4.496	0.222	0.5	0.0511	0.0000	OK
60 minute summer	STORAGE	63	4.496	0.096	0.3	0.2918	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S1	1.001	S2	-0.3	0.037	-0.032	0.0341	
60 minute summer	S2	Orifice		0.2				1.3
60 minute summer	STORAGE	1.000	S1	-0.3	-0.111	-0.039	0.0240	

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Results for 30 year 60 minute winter. 300 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute winter	S1	65	4.510	0.162	0.4	0.0289	0.0000	SURCHARGED
60 minute winter	S2	65	4.510	0.236	0.5	0.0543	0.0000	OK
60 minute winter	STORAGE	65	4.510	0.110	0.3	0.3341	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute winter	S1	1.001	S2	-0.3	-0.038	-0.035	0.0341	
60 minute winter	S2	Orifice		0.3				1.4
60 minute winter	STORAGE	1.000	S1	-0.3	-0.116	-0.039	0.0241	

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Results for 30 year 120 minute summer. 360 minute analysis at 2 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute summer	S1	96	4.493	0.145	0.3	0.0258	0.0000	SURCHARGED
120 minute summer	S2	96	4.493	0.219	0.5	0.0503	0.0000	OK
120 minute summer	STORAGE	96	4.493	0.093	0.2	0.2817	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute summer	S1	1.001	S2	-0.2	-0.030	-0.028	0.0341	
120 minute summer	S2	Orifice		0.2				1.6
120 minute summer	STORAGE	1.000	S1	-0.2	-0.078	-0.029	0.0237	

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Results for 30 year 120 minute winter. 360 minute analysis at 2 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute winter	S1	100	4.511	0.163	0.3	0.0291	0.0000	SURCHARGED
120 minute winter	S2	100	4.511	0.237	0.5	0.0546	0.0000	OK
120 minute winter	STORAGE	100	4.511	0.111	0.2	0.3377	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute winter	S1	1.001	S2	-0.2	0.027	-0.027	0.0341	
120 minute winter	S2	Orifice		0.3				1.8
120 minute winter	STORAGE	1.000	S1	-0.2	-0.082	-0.029	0.0241	

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Results for 30 year 180 minute summer. 420 minute analysis at 4 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute summer	S1	132	4.495	0.147	0.3	0.0261	0.0000	SURCHARGED
180 minute summer	S2	132	4.495	0.221	0.4	0.0508	0.0000	OK
180 minute summer	STORAGE	132	4.495	0.095	0.2	0.2875	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
180 minute summer	S1	1.001	S2	-0.2	0.024	-0.022	0.0341	
180 minute summer	S2	Orifice		0.2				1.9
180 minute summer	STORAGE	1.000	S1	-0.2	-0.091	-0.028	0.0239	

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Results for 30 year 180 minute winter. 420 minute analysis at 4 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute winter	S1	132	4.503	0.155	0.2	0.0276	0.0000	SURCHARGED
180 minute winter	S2	132	4.503	0.229	0.4	0.0527	0.0000	OK
180 minute winter	STORAGE	132	4.503	0.103	0.2	0.3131	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
180 minute winter	S1	1.001	S2	0.2	0.022	0.022	0.0341	
180 minute winter	S2	Orifice		0.3				2.1
180 minute winter	STORAGE	1.000	S1	-0.2	-0.059	-0.022	0.0241	

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Results for 30 year 240 minute summer. 480 minute analysis at 4 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute summer	S1	160	4.466	0.118	0.2	0.0210	0.0000	SURCHARGED
240 minute summer	S2	160	4.466	0.192	0.3	0.0441	0.0000	OK
240 minute summer	STORAGE	160	4.466	0.066	0.1	0.1995	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute summer	S1	1.001	S2	0.1	0.022	0.014	0.0341	
240 minute summer	S2	Orifice		0.2				1.8
240 minute summer	STORAGE	1.000	S1	-0.1	-0.059	-0.018	0.0205	

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Results for 30 year 240 minute winter. 480 minute analysis at 4 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	S1	168	4.482	0.134	0.2	0.0238	0.0000	SURCHARGED
240 minute winter	S2	168	4.482	0.208	0.3	0.0478	0.0000	OK
240 minute winter	STORAGE	168	4.482	0.082	0.1	0.2477	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute winter	S1	1.001	S2	0.1	0.022	0.015	0.0341	
240 minute winter	S2	Orifice		0.2				2.3
240 minute winter	STORAGE	1.000	S1	-0.1	-0.046	-0.016	0.0226	

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Results for 30 year 360 minute summer. 600 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute summer	S1	224	4.465	0.117	0.2	0.0209	0.0000	SURCHARGED
360 minute summer	S2	224	4.465	0.191	0.3	0.0440	0.0000	OK
360 minute summer	STORAGE	224	4.465	0.065	0.1	0.1975	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute summer	S1	1.001	S2	0.1	0.020	0.013	0.0341	
360 minute summer	S2	Orifice		0.2				1.8
360 minute summer	STORAGE	1.000	S1	-0.1	-0.036	-0.015	0.0204	

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Results for 30 year 360 minute winter. 600 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	S1	224	4.439	0.091	0.1	0.0161	0.0000	OK
360 minute winter	S2	224	4.439	0.165	0.2	0.0379	0.0000	OK
360 minute winter	STORAGE	224	4.439	0.039	0.1	0.1171	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute winter	S1	1.001	S2	0.1	0.011	0.011	0.0333	
360 minute winter	S2	Orifice		0.2				2.0
360 minute winter	STORAGE	1.000	S1	0.1	-0.025	0.008	0.0158	

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Results for 30 year 480 minute summer. 720 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute summer	S1	280	4.428	0.080	0.1	0.0142	0.0000	OK
480 minute summer	S2	280	4.428	0.154	0.2	0.0354	0.0000	OK
480 minute summer	STORAGE	280	4.428	0.028	0.1	0.0847	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute summer	S1	1.001	S2	0.1	0.011	0.010	0.0316	
480 minute summer	S2	Orifice		0.2				1.6
480 minute summer	STORAGE	1.000	S1	-0.1	-0.030	-0.008	0.0131	

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Results for 30 year 480 minute winter. 720 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	S1	288	4.399	0.051	0.0	0.0090	0.0000	OK
480 minute winter	S2	288	4.399	0.125	0.2	0.0287	0.0000	OK
480 minute winter	STORAGE	8	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute winter	S1	1.001	S2	0.0	-0.009	0.005	0.0257	
480 minute winter	S2	Orifice		0.2				1.8
480 minute winter	STORAGE	1.000	S1	0.0	0.000	0.000	0.0061	

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Results for 30 year 600 minute summer. 840 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute summer	S1	330	4.380	0.032	0.0	0.0058	0.0000	OK
600 minute summer	S2	330	4.380	0.106	0.2	0.0245	0.0000	OK
600 minute summer	STORAGE	15	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
600 minute summer	S1	1.001	S2	0.0	0.007	0.004	0.0218	
600 minute summer	S2	Orifice		0.2				1.4
600 minute summer	STORAGE	1.000	S1	0.0	0.000	0.000	0.0034	

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Results for 30 year 600 minute winter. 840 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute winter	S1	330	4.350	0.002	0.0	0.0004	0.0000	OK
600 minute winter	S2	330	4.349	0.075	0.2	0.0174	0.0000	OK
600 minute winter	STORAGE	15	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
600 minute winter	S1	1.001	S2	0.0	0.003	0.001	0.0139	
600 minute winter	S2	Orifice		0.1				1.6
600 minute winter	STORAGE	1.000	S1	0.0	0.000	0.000	0.0001	

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Results for 30 year 720 minute summer. 960 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute summer	S1	390	4.380	0.032	0.0	0.0058	0.0000	OK
720 minute summer	S2	390	4.380	0.106	0.2	0.0245	0.0000	OK
720 minute summer	STORAGE	15	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
720 minute summer	S1	1.001	S2	0.0	0.007	0.004	0.0218	
720 minute summer	S2	Orifice		0.2				1.4
720 minute summer	STORAGE	1.000	S1	0.0	0.000	0.000	0.0034	

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Results for 30 year 720 minute winter. 960 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute winter	S1	15	4.348	0.000	0.0	0.0000	0.0000	OK
720 minute winter	S2	465	4.317	0.043	0.1	0.0099	0.0000	OK
720 minute winter	STORAGE	15	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
720 minute winter	S1	1.001	S2	0.0	0.000	0.000	0.0070	
720 minute winter	S2	Orifice		0.1				1.7
720 minute winter	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 30 year 960 minute summer. 1200 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute summer	S1	15	4.348	0.000	0.0	0.0000	0.0000	OK
960 minute summer	S2	585	4.317	0.043	0.1	0.0099	0.0000	OK
960 minute summer	STORAGE	15	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
960 minute summer	S1	1.001	S2	0.0	0.000	0.000	0.0070	
960 minute summer	S2	Orifice		0.1				1.4
960 minute summer	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 30 year 960 minute winter. 1200 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute winter	S1	15	4.348	0.000	0.0	0.0000	0.0000	OK
960 minute winter	S2	570	4.317	0.043	0.1	0.0099	0.0000	OK
960 minute winter	STORAGE	15	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
960 minute winter	S1	1.001	S2	0.0	0.000	0.000	0.0070	
960 minute winter	S2	Orifice		0.1				1.9
960 minute winter	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 30 year 1440 minute summer. 1680 minute analysis at 30 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute summer	S1	30	4.348	0.000	0.0	0.0000	0.0000	OK
1440 minute summer	S2	810	4.317	0.043	0.1	0.0099	0.0000	OK
1440 minute summer	STORAGE	30	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute summer	S1	1.001	S2	0.0	0.000	0.000	0.0070	
1440 minute summer	S2	Orifice		0.1				1.4
1440 minute summer	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 30 year 1440 minute winter. 1680 minute analysis at 30 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute winter	S1	30	4.348	0.000	0.0	0.0000	0.0000	OK
1440 minute winter	S2	840	4.317	0.043	0.1	0.0099	0.0000	OK
1440 minute winter	STORAGE	30	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute winter	S1	1.001	S2	0.0	0.000	0.000	0.0070	
1440 minute winter	S2	Orifice		0.1				1.8
1440 minute winter	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 100 year 15 minute summer. 255 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S1	38	4.483	0.135	0.4	0.0240	0.0000	SURCHARGED
15 minute summer	S2	38	4.483	0.209	0.5	0.0480	0.0000	OK
15 minute summer	STORAGE	38	4.483	0.083	0.3	0.2506	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S1	1.001	S2	-0.3	0.041	-0.034	0.0341	
15 minute summer	S2	Orifice		0.2				1.0
15 minute summer	STORAGE	1.000	S1	-0.3	-0.117	-0.039	0.0227	

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Results for 100 year 15 minute winter. 255 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S1	38	4.493	0.145	0.4	0.0257	0.0000	SURCHARGED
15 minute winter	S2	38	4.493	0.219	0.5	0.0503	0.0000	OK
15 minute winter	STORAGE	38	4.493	0.093	0.3	0.2809	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	S1	1.001	S2	-0.3	0.061	-0.033	0.0341	
15 minute winter	S2	Orifice		0.2				1.1
15 minute winter	STORAGE	1.000	S1	-0.3	-0.120	-0.038	0.0237	

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Results for 100 year 30 minute summer. 270 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	S1	46	4.518	0.170	0.5	0.0302	0.0000	SURCHARGED
30 minute summer	S2	46	4.518	0.244	0.6	0.0561	0.0000	OK
30 minute summer	STORAGE	46	4.518	0.118	0.4	0.3570	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	S1	1.001	S2	-0.4	-0.048	-0.045	0.0341	
30 minute summer	S2	Orifice		0.3				1.3
30 minute summer	STORAGE	1.000	S1	-0.4	-0.134	-0.048	0.0241	

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Results for 100 year 30 minute winter. 270 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute winter	S1	47	4.555	0.207	0.6	0.0369	0.0000	SURCHARGED
30 minute winter	S2	47	4.555	0.281	0.7	0.0647	0.0000	OK
30 minute winter	STORAGE	47	4.555	0.155	0.5	0.4708	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute winter	S1	1.001	S2	-0.4	-0.052	-0.046	0.0341	
30 minute winter	S2	Orifice		0.3				1.6
30 minute winter	STORAGE	1.000	S1	-0.5	-0.145	-0.058	0.0241	

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Results for 100 year 60 minute summer. 300 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S1	65	4.556	0.208	0.5	0.0370	0.0000	SURCHARGED
60 minute summer	S2	65	4.556	0.282	0.6	0.0649	0.0000	OK
60 minute summer	STORAGE	65	4.556	0.156	0.4	0.4732	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S1	1.001	S2	-0.4	-0.048	-0.044	0.0341	
60 minute summer	S2	Orifice		0.3				1.7
60 minute summer	STORAGE	1.000	S1	-0.4	-0.134	-0.048	0.0241	

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Results for 100 year 60 minute winter. 300 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute winter	S1	67	4.589	0.241	0.6	0.0430	0.0000	SURCHARGED
60 minute winter	S2	67	4.589	0.315	0.7	0.0725	0.0000	OK
60 minute winter	STORAGE	67	4.589	0.189	0.4	0.5743	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute winter	S1	1.001	S2	-0.4	-0.046	-0.045	0.0341	
60 minute winter	S2	Orifice		0.3				2.0
60 minute winter	STORAGE	1.000	S1	-0.4	-0.127	-0.053	0.0241	

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Results for 100 year 120 minute summer. 360 minute analysis at 2 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute summer	S1	98	4.541	0.193	0.4	0.0343	0.0000	SURCHARGED
120 minute summer	S2	98	4.541	0.267	0.6	0.0614	0.0000	OK
120 minute summer	STORAGE	98	4.541	0.141	0.3	0.4268	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute summer	S1	1.001	S2	-0.3	-0.038	-0.038	0.0341	
120 minute summer	S2	Orifice		0.3				2.0
120 minute summer	STORAGE	1.000	S1	-0.3	-0.104	-0.037	0.0241	

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Results for 100 year 120 minute winter. 360 minute analysis at 2 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute winter	S1	104	4.573	0.225	0.4	0.0400	0.0000	SURCHARGED
120 minute winter	S2	104	4.573	0.299	0.6	0.0687	0.0000	OK
120 minute winter	STORAGE	104	4.573	0.173	0.3	0.5238	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute winter	S1	1.001	S2	-0.3	-0.036	-0.036	0.0341	
120 minute winter	S2	Orifice		0.3				2.3
120 minute winter	STORAGE	1.000	S1	-0.3	-0.098	-0.037	0.0241	

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Results for 100 year 180 minute summer. 420 minute analysis at 4 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute summer	S1	132	4.533	0.185	0.3	0.0330	0.0000	SURCHARGED
180 minute summer	S2	132	4.533	0.259	0.5	0.0597	0.0000	OK
180 minute summer	STORAGE	132	4.533	0.133	0.2	0.4046	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
180 minute summer	S1	1.001	S2	-0.2	-0.028	-0.027	0.0341	
180 minute summer	S2	Orifice		0.3				2.3
180 minute summer	STORAGE	1.000	S1	-0.2	-0.091	-0.029	0.0241	

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Results for 100 year 180 minute winter. 420 minute analysis at 4 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute winter	S1	140	4.554	0.206	0.3	0.0366	0.0000	SURCHARGED
180 minute winter	S2	140	4.554	0.280	0.5	0.0644	0.0000	OK
180 minute winter	STORAGE	140	4.554	0.154	0.2	0.4662	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
180 minute winter	S1	1.001	S2	-0.2	-0.025	-0.025	0.0341	
180 minute winter	S2	Orifice		0.3				2.5
180 minute winter	STORAGE	1.000	S1	-0.2	-0.064	-0.028	0.0241	

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Results for 100 year 240 minute summer. 480 minute analysis at 4 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute summer	S1	164	4.513	0.165	0.2	0.0294	0.0000	SURCHARGED
240 minute summer	S2	164	4.513	0.239	0.4	0.0550	0.0000	OK
240 minute summer	STORAGE	164	4.513	0.113	0.2	0.3424	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute summer	S1	1.001	S2	0.2	0.024	0.020	0.0341	
240 minute summer	S2	Orifice		0.3				2.4
240 minute summer	STORAGE	1.000	S1	-0.2	-0.062	-0.023	0.0241	

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Results for 100 year 240 minute winter. 480 minute analysis at 4 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	S1	172	4.543	0.195	0.2	0.0346	0.0000	SURCHARGED
240 minute winter	S2	172	4.543	0.269	0.4	0.0618	0.0000	OK
240 minute winter	STORAGE	172	4.543	0.143	0.2	0.4323	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute winter	S1	1.001	S2	0.2	0.022	0.022	0.0341	
240 minute winter	S2	Orifice		0.3				2.9
240 minute winter	STORAGE	1.000	S1	-0.2	-0.070	-0.022	0.0241	

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Results for 100 year 360 minute summer. 600 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute summer	S1	232	4.493	0.145	0.2	0.0259	0.0000	SURCHARGED
360 minute summer	S2	232	4.493	0.219	0.3	0.0505	0.0000	OK
360 minute summer	STORAGE	232	4.493	0.093	0.1	0.2833	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute summer	S1	1.001	S2	0.1	0.020	0.014	0.0341	
360 minute summer	S2	Orifice		0.2				2.4
360 minute summer	STORAGE	1.000	S1	-0.1	-0.036	-0.015	0.0238	

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Results for 100 year 360 minute winter. 600 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	S1	232	4.508	0.160	0.2	0.0285	0.0000	SURCHARGED
360 minute winter	S2	232	4.508	0.234	0.3	0.0539	0.0000	OK
360 minute winter	STORAGE	232	4.508	0.108	0.1	0.3279	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute winter	S1	1.001	S2	0.1	0.019	0.015	0.0341	
360 minute winter	S2	Orifice		0.3				3.2
360 minute winter	STORAGE	1.000	S1	-0.1	-0.042	-0.015	0.0241	

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Results for 100 year 480 minute summer. 720 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute summer	S1	288	4.482	0.134	0.2	0.0239	0.0000	SURCHARGED
480 minute summer	S2	288	4.482	0.208	0.3	0.0480	0.0000	OK
480 minute summer	STORAGE	288	4.482	0.082	0.1	0.2500	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute summer	S1	1.001	S2	0.1	0.016	0.014	0.0341	
480 minute summer	S2	Orifice		0.2				2.4
480 minute summer	STORAGE	1.000	S1	-0.1	-0.055	-0.015	0.0227	

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Results for 100 year 480 minute winter. 720 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	S1	288	4.450	0.102	0.1	0.0182	0.0000	SURCHARGED
480 minute winter	S2	288	4.450	0.176	0.2	0.0406	0.0000	OK
480 minute winter	STORAGE	288	4.450	0.050	0.1	0.1529	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute winter	S1	1.001	S2	0.1	0.012	0.012	0.0341	
480 minute winter	S2	Orifice		0.2				2.6
480 minute winter	STORAGE	1.000	S1	-0.1	-0.032	-0.009	0.0182	

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Results for 100 year 600 minute summer. 840 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute summer	S1	345	4.435	0.087	0.1	0.0155	0.0000	OK
600 minute summer	S2	345	4.435	0.161	0.2	0.0370	0.0000	OK
600 minute summer	STORAGE	345	4.435	0.035	0.1	0.1057	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
600 minute summer	S1	1.001	S2	0.1	0.011	0.010	0.0327	
600 minute summer	S2	Orifice		0.2				2.1
600 minute summer	STORAGE	1.000	S1	0.1	-0.022	0.007	0.0149	

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Results for 100 year 600 minute winter. 840 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute winter	S1	360	4.404	0.056	0.0	0.0100	0.0000	OK
600 minute winter	S2	360	4.404	0.130	0.2	0.0299	0.0000	OK
600 minute winter	STORAGE	360	4.404	0.004	0.0	0.0126	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
600 minute winter	S1	1.001	S2	0.0	0.007	0.006	0.0269	
600 minute winter	S2	Orifice		0.2				2.3
600 minute winter	STORAGE	1.000	S1	0.0	-0.005	-0.001	0.0071	

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Results for 100 year 720 minute summer. 960 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute summer	S1	405	4.435	0.087	0.1	0.0155	0.0000	OK
720 minute summer	S2	405	4.435	0.161	0.2	0.0370	0.0000	OK
720 minute summer	STORAGE	405	4.435	0.035	0.1	0.1057	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
720 minute summer	S1	1.001	S2	0.1	0.011	0.010	0.0327	
720 minute summer	S2	Orifice		0.2				2.1
720 minute summer	STORAGE	1.000	S1	0.1	-0.022	0.007	0.0149	

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Results for 100 year 720 minute winter. 960 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute winter	S1	405	4.398	0.050	0.0	0.0090	0.0000	OK
720 minute winter	S2	405	4.398	0.124	0.2	0.0286	0.0000	OK
720 minute winter	STORAGE	15	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
720 minute winter	S1	1.001	S2	0.0	0.007	0.005	0.0256	
720 minute winter	S2	Orifice		0.2				2.3
720 minute winter	STORAGE	1.000	S1	0.0	0.000	0.000	0.0061	

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Results for 100 year 960 minute summer. 1200 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute summer	S1	510	4.380	0.032	0.0	0.0058	0.0000	OK
960 minute summer	S2	510	4.380	0.106	0.2	0.0245	0.0000	OK
960 minute summer	STORAGE	15	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
960 minute summer	S1	1.001	S2	0.0	0.007	0.004	0.0218	
960 minute summer	S2	Orifice		0.2				1.8
960 minute summer	STORAGE	1.000	S1	0.0	0.000	0.000	0.0034	

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Results for 100 year 960 minute winter. 1200 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute winter	S1	15	4.348	0.000	0.0	0.0000	0.0000	OK
960 minute winter	S2	540	4.317	0.043	0.1	0.0099	0.0000	OK
960 minute winter	STORAGE	15	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
960 minute winter	S1	1.001	S2	0.0	0.000	0.000	0.0070	
960 minute winter	S2	Orifice		0.1				2.3
960 minute winter	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 100 year 1440 minute summer. 1680 minute analysis at 30 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute summer	S1	30	4.348	0.000	0.0	0.0000	0.0000	OK
1440 minute summer	S2	840	4.317	0.043	0.1	0.0099	0.0000	OK
1440 minute summer	STORAGE	30	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute summer	S1	1.001	S2	0.0	0.000	0.000	0.0070	
1440 minute summer	S2	Orifice		0.1				1.8
1440 minute summer	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 100 year 1440 minute winter. 1680 minute analysis at 30 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute winter	S1	30	4.348	0.000	0.0	0.0000	0.0000	OK
1440 minute winter	S2	780	4.317	0.043	0.1	0.0099	0.0000	OK
1440 minute winter	STORAGE	30	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute winter	S1	1.001	S2	0.0	0.000	0.000	0.0070	
1440 minute winter	S2	Orifice		0.1				2.5
1440 minute winter	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 100 year +20% CC 15 minute summer. 255 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S1	38	4.495	0.147	0.4	0.0261	0.0000	SURCHARGED
15 minute summer	S2	38	4.495	0.221	0.6	0.0507	0.0000	OK
15 minute summer	STORAGE	38	4.495	0.095	0.3	0.2871	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S1	1.001	S2	-0.3	-0.064	-0.032	0.0341	
15 minute summer	S2	Orifice		0.2				1.1
15 minute summer	STORAGE	1.000	S1	-0.3	-0.118	-0.038	0.0239	

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Results for 100 year +20% CC 15 minute winter. 255 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S1	39	4.542	0.194	0.5	0.0345	0.0000	SURCHARGED
15 minute winter	S2	39	4.542	0.268	0.6	0.0615	0.0000	OK
15 minute winter	STORAGE	39	4.542	0.142	0.5	0.4294	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	S1	1.001	S2	-0.3	-0.047	-0.044	0.0341	
15 minute winter	S2	Orifice		0.3				1.4
15 minute winter	STORAGE	1.000	S1	-0.5	-0.153	-0.060	0.0241	

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Results for 100 year +20% CC 30 minute summer. 270 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	S1	47	4.576	0.228	0.6	0.0406	0.0000	SURCHARGED
30 minute summer	S2	47	4.576	0.302	0.7	0.0694	0.0000	OK
30 minute summer	STORAGE	47	4.576	0.176	0.5	0.5330	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	S1	1.001	S2	-0.4	-0.056	-0.053	0.0341	
30 minute summer	S2	Orifice		0.3				1.7
30 minute summer	STORAGE	1.000	S1	-0.5	-0.162	-0.064	0.0241	

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Results for 100 year +20% CC 30 minute winter. 270 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute winter	S1	48	4.600	0.252	0.6	0.0448	0.0000	SURCHARGED
30 minute winter	S2	48	4.599	0.325	0.8	0.0749	0.0000	OK
30 minute winter	STORAGE	48	4.600	0.200	0.5	0.6048	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute winter	S1	1.001	S2	-0.4	-0.059	-0.056	0.0341	
30 minute winter	S2	Orifice		0.3				1.8
30 minute winter	STORAGE	1.000	S1	-0.5	-0.171	-0.068	0.0241	

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Results for 100 year +20% CC 60 minute summer. 300 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S1	65	4.613	0.265	0.6	0.0471	0.0000	SURCHARGED
60 minute summer	S2	65	4.612	0.338	0.8	0.0779	0.0000	OK
60 minute summer	STORAGE	65	4.613	0.213	0.5	0.6443	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S1	1.001	S2	-0.4	-0.053	-0.052	0.0341	
60 minute summer	S2	Orifice		0.3				2.1
60 minute summer	STORAGE	1.000	S1	-0.5	-0.155	-0.060	0.0241	

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Results for 100 year +20% CC 60 minute winter. 300 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute winter	S1	68	4.646	0.298	0.6	0.0531	0.0000	SURCHARGED
60 minute winter	S2	68	4.646	0.372	0.8	0.0856	0.0000	OK
60 minute winter	STORAGE	68	4.646	0.246	0.5	0.7464	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute winter	S1	1.001	S2	-0.4	-0.055	-0.055	0.0341	
60 minute winter	S2	Orifice		0.3				2.3
60 minute winter	STORAGE	1.000	S1	-0.5	-0.146	-0.061	0.0241	

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Results for 100 year +20% CC 120 minute summer. 360 minute analysis at 2 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute summer	S1	100	4.611	0.263	0.5	0.0468	0.0000	SURCHARGED
120 minute summer	S2	102	4.611	0.337	0.7	0.0775	0.0000	OK
120 minute summer	STORAGE	100	4.611	0.211	0.4	0.6399	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute summer	S1	1.001	S2	-0.3	-0.044	-0.043	0.0341	
120 minute summer	S2	Orifice		0.3				2.5
120 minute summer	STORAGE	1.000	S1	-0.4	-0.111	-0.052	0.0241	

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Results for 100 year +20% CC 120 minute winter. 360 minute analysis at 2 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute winter	S1	106	4.645	0.297	0.5	0.0529	0.0000	SURCHARGED
120 minute winter	S2	106	4.645	0.371	0.7	0.0854	0.0000	OK
120 minute winter	STORAGE	106	4.645	0.245	0.4	0.7435	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute winter	S1	1.001	S2	-0.3	-0.042	-0.041	0.0341	
120 minute winter	S2	Orifice		0.3				2.8
120 minute winter	STORAGE	1.000	S1	-0.4	-0.095	-0.050	0.0241	

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Results for 100 year +20% CC 180 minute summer. 420 minute analysis at 4 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute summer	S1	136	4.586	0.238	0.4	0.0424	0.0000	SURCHARGED
180 minute summer	S2	136	4.586	0.312	0.6	0.0718	0.0000	OK
180 minute summer	STORAGE	136	4.586	0.186	0.3	0.5650	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
180 minute summer	S1	1.001	S2	-0.3	-0.036	-0.036	0.0341	
180 minute summer	S2	Orifice		0.3				2.7
180 minute summer	STORAGE	1.000	S1	-0.3	-0.091	-0.037	0.0241	

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Results for 100 year +20% CC 180 minute winter. 420 minute analysis at 4 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute winter	S1	144	4.604	0.256	0.3	0.0455	0.0000	SURCHARGED
180 minute winter	S2	144	4.604	0.330	0.5	0.0758	0.0000	OK
180 minute winter	STORAGE	144	4.604	0.204	0.2	0.6173	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
180 minute winter	S1	1.001	S2	-0.2	-0.027	-0.027	0.0341	
180 minute winter	S2	Orifice		0.3				3.0
180 minute winter	STORAGE	1.000	S1	-0.2	-0.060	-0.029	0.0241	

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Results for 100 year +20% CC 240 minute summer. 480 minute analysis at 4 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute summer	S1	168	4.563	0.215	0.3	0.0383	0.0000	SURCHARGED
240 minute summer	S2	168	4.563	0.289	0.5	0.0665	0.0000	OK
240 minute summer	STORAGE	168	4.563	0.163	0.2	0.4945	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute summer	S1	1.001	S2	-0.2	-0.028	-0.028	0.0341	
240 minute summer	S2	Orifice		0.3				2.9
240 minute summer	STORAGE	1.000	S1	-0.2	-0.066	-0.029	0.0241	

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Results for 100 year +20% CC 240 minute winter. 480 minute analysis at 4 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	S1	180	4.583	0.235	0.3	0.0419	0.0000	SURCHARGED
240 minute winter	S2	180	4.583	0.309	0.5	0.0711	0.0000	OK
240 minute winter	STORAGE	180	4.583	0.183	0.2	0.5558	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute winter	S1	1.001	S2	0.2	0.023	0.023	0.0341	
240 minute winter	S2	Orifice		0.3				3.3
240 minute winter	STORAGE	1.000	S1	-0.2	-0.066	-0.027	0.0241	

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Results for 100 year +20% CC 360 minute summer. 600 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute summer	S1	232	4.551	0.203	0.2	0.0361	0.0000	SURCHARGED
360 minute summer	S2	232	4.551	0.277	0.4	0.0636	0.0000	OK
360 minute summer	STORAGE	232	4.551	0.151	0.2	0.4564	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute summer	S1	1.001	S2	0.2	0.022	0.019	0.0341	
360 minute summer	S2	Orifice		0.3				3.2
360 minute summer	STORAGE	1.000	S1	-0.2	0.039	-0.022	0.0241	

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Results for 100 year +20% CC 360 minute winter. 600 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	S1	240	4.548	0.200	0.2	0.0355	0.0000	SURCHARGED
360 minute winter	S2	240	4.548	0.274	0.3	0.0629	0.0000	OK
360 minute winter	STORAGE	240	4.548	0.148	0.1	0.4476	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute winter	S1	1.001	S2	0.1	0.017	0.017	0.0341	
360 minute winter	S2	Orifice		0.3				3.7
360 minute winter	STORAGE	1.000	S1	-0.1	-0.055	-0.015	0.0241	

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Results for 100 year +20% CC 480 minute summer. 720 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute summer	S1	288	4.510	0.162	0.2	0.0288	0.0000	SURCHARGED
480 minute summer	S2	288	4.510	0.236	0.3	0.0543	0.0000	OK
480 minute summer	STORAGE	288	4.510	0.110	0.1	0.3333	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute summer	S1	1.001	S2	0.1	0.020	0.015	0.0341	
480 minute summer	S2	Orifice		0.3				2.9
480 minute summer	STORAGE	1.000	S1	-0.1	-0.055	-0.015	0.0241	

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Results for 100 year +20% CC 480 minute winter. 720 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	S1	304	4.517	0.169	0.2	0.0301	0.0000	SURCHARGED
480 minute winter	S2	304	4.517	0.243	0.3	0.0559	0.0000	OK
480 minute winter	STORAGE	304	4.517	0.117	0.1	0.3541	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute winter	S1	1.001	S2	0.1	0.018	0.015	0.0341	
480 minute winter	S2	Orifice		0.3				3.6
480 minute winter	STORAGE	1.000	S1	-0.1	-0.025	-0.014	0.0241	

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Results for 100 year +20% CC 600 minute summer. 840 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute summer	S1	360	4.499	0.151	0.2	0.0269	0.0000	SURCHARGED
600 minute summer	S2	360	4.499	0.225	0.3	0.0518	0.0000	OK
600 minute summer	STORAGE	360	4.499	0.099	0.1	0.3004	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
600 minute summer	S1	1.001	S2	0.1	0.019	0.014	0.0341	
600 minute summer	S2	Orifice		0.2				2.9
600 minute summer	STORAGE	1.000	S1	-0.1	-0.034	-0.015	0.0241	

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Results for 100 year +20% CC 600 minute winter. 840 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute winter	S1	360	4.465	0.117	0.1	0.0208	0.0000	SURCHARGED
600 minute winter	S2	360	4.465	0.191	0.2	0.0438	0.0000	OK
600 minute winter	STORAGE	360	4.465	0.065	0.1	0.1958	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
600 minute winter	S1	1.001	S2	0.1	0.012	0.012	0.0341	
600 minute winter	S2	Orifice		0.2				3.2
600 minute winter	STORAGE	1.000	S1	0.1	0.019	0.009	0.0203	

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Results for 100 year +20% CC 720 minute summer. 960 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute summer	S1	405	4.453	0.105	0.2	0.0187	0.0000	SURCHARGED
720 minute summer	S2	405	4.453	0.179	0.3	0.0411	0.0000	OK
720 minute summer	STORAGE	405	4.453	0.053	0.1	0.1600	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
720 minute summer	S1	1.001	S2	0.1	0.012	0.011	0.0341	
720 minute summer	S2	Orifice		0.2				2.7
720 minute summer	STORAGE	1.000	S1	-0.1	-0.029	-0.015	0.0185	

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Results for 100 year +20% CC 720 minute winter. 960 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute winter	S1	435	4.408	0.060	0.0	0.0107	0.0000	OK
720 minute winter	S2	435	4.408	0.134	0.2	0.0308	0.0000	OK
720 minute winter	STORAGE	435	4.408	0.008	0.0	0.0241	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
720 minute winter	S1	1.001	S2	0.1	0.008	0.007	0.0277	
720 minute winter	S2	Orifice		0.2				2.9
720 minute winter	STORAGE	1.000	S1	0.0	0.010	0.002	0.0080	

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Results for 100 year +20% CC 960 minute summer. 1200 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute summer	S1	525	4.410	0.062	0.1	0.0111	0.0000	OK
960 minute summer	S2	525	4.411	0.137	0.2	0.0314	0.0000	OK
960 minute summer	STORAGE	525	4.410	0.010	0.0	0.0312	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
960 minute summer	S1	1.001	S2	0.1	0.009	0.007	0.0282	
960 minute summer	S2	Orifice		0.2				2.4
960 minute summer	STORAGE	1.000	S1	0.0	0.013	-0.004	0.0086	

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Results for 100 year +20% CC 960 minute winter. 1200 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute winter	S1	510	4.380	0.032	0.0	0.0058	0.0000	OK
960 minute winter	S2	510	4.380	0.106	0.2	0.0245	0.0000	OK
960 minute winter	STORAGE	15	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
960 minute winter	S1	1.001	S2	0.0	0.007	0.004	0.0218	
960 minute winter	S2	Orifice		0.2				2.7
960 minute winter	STORAGE	1.000	S1	0.0	0.000	0.000	0.0034	

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Results for 100 year +20% CC 1440 minute summer. 1680 minute analysis at 30 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute summer	S1	30	4.348	0.000	0.0	0.0000	0.0000	OK
1440 minute summer	S2	810	4.317	0.043	0.1	0.0099	0.0000	OK
1440 minute summer	STORAGE	30	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute summer	S1	1.001	S2	0.0	0.000	0.000	0.0070	
1440 minute summer	S2	Orifice		0.1				2.1
1440 minute summer	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 100 year +20% CC 1440 minute winter. 1680 minute analysis at 30 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute winter	S1	30	4.348	0.000	0.0	0.0000	0.0000	OK
1440 minute winter	S2	750	4.317	0.043	0.1	0.0099	0.0000	OK
1440 minute winter	STORAGE	30	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute winter	S1	1.001	S2	0.0	0.000	0.000	0.0070	
1440 minute winter	S2	Orifice		0.1				2.9
1440 minute winter	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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Results for 100 year +40% CC 15 minute summer. 255 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S1	38	4.546	0.198	0.5	0.0352	0.0000	SURCHARGED
15 minute summer	S2	38	4.546	0.272	0.6	0.0625	0.0000	OK
15 minute summer	STORAGE	38	4.546	0.146	0.5	0.4416	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S1	1.001	S2	-0.3	0.055	-0.044	0.0341	
15 minute summer	S2	Orifice		0.3				1.4
15 minute summer	STORAGE	1.000	S1	-0.5	-0.147	-0.060	0.0241	

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Results for 100 year +40% CC 15 minute winter. 255 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S1	39	4.578	0.230	0.6	0.0410	0.0000	SURCHARGED
15 minute winter	S2	39	4.578	0.304	0.7	0.0699	0.0000	OK
15 minute winter	STORAGE	39	4.578	0.178	0.6	0.5402	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	S1	1.001	S2	-0.4	-0.059	-0.056	0.0341	
15 minute winter	S2	Orifice		0.3				1.6
15 minute winter	STORAGE	1.000	S1	-0.6	-0.161	-0.070	0.0241	

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Results for 100 year +40% CC 30 minute summer. 270 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	S1	47	4.614	0.266	0.7	0.0474	0.0000	SURCHARGED
30 minute summer	S2	47	4.614	0.340	0.9	0.0783	0.0000	OK
30 minute summer	STORAGE	47	4.614	0.214	0.6	0.6499	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	S1	1.001	S2	-0.5	-0.061	-0.061	0.0341	
30 minute summer	S2	Orifice		0.3				1.9
30 minute summer	STORAGE	1.000	S1	-0.6	-0.167	-0.071	0.0241	

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Results for 100 year +40% CC 30 minute winter. 270 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute winter	S1	49	4.650	0.302	0.8	0.0537	0.0000	SURCHARGED
30 minute winter	S2	49	4.650	0.376	1.0	0.0864	0.0000	OK
30 minute winter	STORAGE	49	4.650	0.250	0.6	0.7568	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute winter	S1	1.001	S2	-0.6	-0.071	-0.070	0.0341	
30 minute winter	S2	Orifice		0.3				2.1
30 minute winter	STORAGE	1.000	S1	-0.6	-0.177	-0.073	0.0241	

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Results for 100 year +40% CC 60 minute summer. 300 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S1	67	4.668	0.320	0.7	0.0570	0.0000	SURCHARGED
60 minute summer	S2	67	4.668	0.394	0.9	0.0907	0.0000	OK
60 minute summer	STORAGE	67	4.668	0.268	0.5	0.8129	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S1	1.001	S2	-0.5	-0.064	-0.063	0.0341	
60 minute summer	S2	Orifice		0.3				2.5
60 minute summer	STORAGE	1.000	S1	-0.5	-0.161	-0.069	0.0241	

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Results for 100 year +40% CC 60 minute winter. 300 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute winter	S1	69	4.708	0.360	0.8	0.0641	0.0000	SURCHARGED
60 minute winter	S2	68	4.708	0.434	1.0	0.0998	0.0000	OK
60 minute winter	STORAGE	69	4.708	0.308	0.6	0.9339	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute winter	S1	1.001	S2	-0.6	-0.071	-0.070	0.0341	
60 minute winter	S2	Orifice		0.3				2.7
60 minute winter	STORAGE	1.000	S1	-0.6	-0.157	-0.072	0.0241	

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Results for 100 year +40% CC 120 minute summer. 360 minute analysis at 2 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute summer	S1	102	4.667	0.319	0.6	0.0568	0.0000	SURCHARGED
120 minute summer	S2	102	4.667	0.393	0.8	0.0904	0.0000	OK
120 minute summer	STORAGE	102	4.667	0.267	0.5	0.8093	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute summer	S1	1.001	S2	-0.4	-0.053	-0.053	0.0341	
120 minute summer	S2	Orifice		0.3				2.9
120 minute summer	STORAGE	1.000	S1	-0.5	-0.110	-0.059	0.0241	

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Results for 100 year +40% CC 120 minute winter. 360 minute analysis at 2 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute winter	S1	108	4.705	0.357	0.6	0.0635	0.0000	SURCHARGED
120 minute winter	S2	108	4.704	0.430	0.8	0.0990	0.0000	OK
120 minute winter	STORAGE	108	4.705	0.305	0.4	0.9230	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute winter	S1	1.001	S2	-0.4	-0.050	-0.049	0.0341	
120 minute winter	S2	Orifice		0.3				3.3
120 minute winter	STORAGE	1.000	S1	-0.4	-0.080	-0.056	0.0241	

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Results for 100 year +40% CC 180 minute summer. 420 minute analysis at 4 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute summer	S1	136	4.648	0.300	0.5	0.0535	0.0000	SURCHARGED
180 minute summer	S2	136	4.648	0.374	0.7	0.0861	0.0000	OK
180 minute summer	STORAGE	136	4.648	0.248	0.4	0.7529	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
180 minute summer	S1	1.001	S2	-0.3	-0.042	-0.042	0.0341	
180 minute summer	S2	Orifice		0.3				3.2
180 minute summer	STORAGE	1.000	S1	-0.4	-0.091	-0.051	0.0241	

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Results for 100 year +40% CC 180 minute winter. 420 minute analysis at 4 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute winter	S1	148	4.667	0.319	0.4	0.0568	0.0000	SURCHARGED
180 minute winter	S2	148	4.667	0.393	0.6	0.0904	0.0000	OK
180 minute winter	STORAGE	148	4.667	0.267	0.3	0.8099	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
180 minute winter	S1	1.001	S2	-0.3	-0.035	-0.034	0.0341	
180 minute winter	S2	Orifice		0.3				3.5
180 minute winter	STORAGE	1.000	S1	-0.3	-0.060	-0.042	0.0241	

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Results for 100 year +40% CC 240 minute summer. 480 minute analysis at 4 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute summer	S1	168	4.622	0.274	0.4	0.0488	0.0000	SURCHARGED
240 minute summer	S2	168	4.622	0.348	0.6	0.0800	0.0000	OK
240 minute summer	STORAGE	168	4.622	0.222	0.3	0.6730	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute summer	S1	1.001	S2	-0.3	-0.036	-0.035	0.0341	
240 minute summer	S2	Orifice		0.3				3.4
240 minute summer	STORAGE	1.000	S1	-0.3	-0.066	-0.043	0.0241	

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Results for 100 year +40% CC 240 minute winter. 480 minute analysis at 4 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	S1	180	4.638	0.290	0.3	0.0517	0.0000	SURCHARGED
240 minute winter	S2	180	4.638	0.364	0.5	0.0838	0.0000	OK
240 minute winter	STORAGE	180	4.638	0.238	0.2	0.7222	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute winter	S1	1.001	S2	0.2	0.026	0.026	0.0341	
240 minute winter	S2	Orifice		0.3				3.7
240 minute winter	STORAGE	1.000	S1	-0.2	-0.066	-0.029	0.0241	

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Results for 100 year +40% CC 360 minute summer. 600 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute summer	S1	232	4.584	0.236	0.3	0.0420	0.0000	SURCHARGED
360 minute summer	S2	232	4.584	0.310	0.5	0.0712	0.0000	OK
360 minute summer	STORAGE	232	4.584	0.184	0.2	0.5568	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute summer	S1	1.001	S2	-0.2	-0.024	-0.024	0.0341	
360 minute summer	S2	Orifice		0.3				3.8
360 minute summer	STORAGE	1.000	S1	-0.2	-0.055	-0.028	0.0241	

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Results for 100 year +40% CC 360 minute winter. 600 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	S1	248	4.612	0.264	0.2	0.0469	0.0000	SURCHARGED
360 minute winter	S2	248	4.612	0.338	0.4	0.0776	0.0000	OK
360 minute winter	STORAGE	248	4.612	0.212	0.2	0.6415	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute winter	S1	1.001	S2	0.2	0.021	0.021	0.0341	
360 minute winter	S2	Orifice		0.3				4.3
360 minute winter	STORAGE	1.000	S1	-0.2	-0.055	-0.021	0.0241	

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Results for 100 year +40% CC 480 minute summer. 720 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute summer	S1	296	4.573	0.225	0.2	0.0400	0.0000	SURCHARGED
480 minute summer	S2	296	4.573	0.299	0.4	0.0687	0.0000	OK
480 minute summer	STORAGE	296	4.573	0.173	0.2	0.5232	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute summer	S1	1.001	S2	0.1	0.019	0.018	0.0341	
480 minute summer	S2	Orifice		0.3				3.8
480 minute summer	STORAGE	1.000	S1	-0.2	-0.055	-0.022	0.0241	

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Results for 100 year +40% CC 480 minute winter. 720 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	S1	312	4.568	0.220	0.2	0.0392	0.0000	SURCHARGED
480 minute winter	S2	312	4.568	0.294	0.3	0.0677	0.0000	OK
480 minute winter	STORAGE	312	4.568	0.168	0.1	0.5098	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute winter	S1	1.001	S2	0.1	0.017	0.017	0.0341	
480 minute winter	S2	Orifice		0.3				4.7
480 minute winter	STORAGE	1.000	S1	-0.1	-0.037	-0.015	0.0241	

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Results for 100 year +40% CC 600 minute summer. 840 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute summer	S1	360	4.529	0.181	0.2	0.0323	0.0000	SURCHARGED
600 minute summer	S2	360	4.529	0.255	0.3	0.0587	0.0000	OK
600 minute summer	STORAGE	360	4.529	0.129	0.1	0.3923	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
600 minute summer	S1	1.001	S2	0.1	0.021	0.015	0.0341	
600 minute summer	S2	Orifice		0.3				3.6
600 minute summer	STORAGE	1.000	S1	-0.1	-0.067	-0.018	0.0241	

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Results for 100 year +40% CC 600 minute winter. 840 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute winter	S1	360	4.523	0.175	0.2	0.0312	0.0000	SURCHARGED
600 minute winter	S2	360	4.523	0.249	0.3	0.0573	0.0000	OK
600 minute winter	STORAGE	360	4.523	0.123	0.1	0.3733	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
600 minute winter	S1	1.001	S2	0.1	0.015	0.015	0.0341	
600 minute winter	S2	Orifice		0.3				4.1
600 minute winter	STORAGE	1.000	S1	-0.1	-0.020	-0.014	0.0241	

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Results for 100 year +40% CC 720 minute summer. 960 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute summer	S1	405	4.503	0.155	0.2	0.0277	0.0000	SURCHARGED
720 minute summer	S2	405	4.503	0.229	0.3	0.0527	0.0000	OK
720 minute summer	STORAGE	405	4.503	0.103	0.1	0.3132	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
720 minute summer	S1	1.001	S2	0.1	0.014	0.014	0.0341	
720 minute summer	S2	Orifice		0.3				3.4
720 minute summer	STORAGE	1.000	S1	-0.1	-0.029	-0.015	0.0241	

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Results for 100 year +40% CC 720 minute winter. 960 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute winter	S1	420	4.467	0.119	0.1	0.0212	0.0000	SURCHARGED
720 minute winter	S2	420	4.467	0.193	0.2	0.0445	0.0000	OK
720 minute winter	STORAGE	420	4.467	0.067	0.1	0.2042	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
720 minute winter	S1	1.001	S2	0.1	0.012	0.012	0.0341	
720 minute winter	S2	Orifice		0.2				3.9
720 minute winter	STORAGE	1.000	S1	-0.1	-0.038	-0.009	0.0207	

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Results for 100 year +40% CC 960 minute summer. 1200 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute summer	S1	540	4.465	0.117	0.1	0.0208	0.0000	SURCHARGED
960 minute summer	S2	540	4.465	0.191	0.2	0.0438	0.0000	OK
960 minute summer	STORAGE	540	4.465	0.065	0.1	0.1958	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
960 minute summer	S1	1.001	S2	0.1	0.012	0.012	0.0341	
960 minute summer	S2	Orifice		0.2				3.3
960 minute summer	STORAGE	1.000	S1	0.1	0.019	0.009	0.0203	

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Results for 100 year +40% CC 960 minute winter. 1200 minute analysis at 15 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute winter	S1	555	4.408	0.060	0.0	0.0107	0.0000	OK
960 minute winter	S2	555	4.408	0.134	0.2	0.0308	0.0000	OK
960 minute winter	STORAGE	555	4.408	0.008	0.0	0.0241	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
960 minute winter	S1	1.001	S2	0.1	0.008	0.007	0.0277	
960 minute winter	S2	Orifice		0.2				3.6
960 minute winter	STORAGE	1.000	S1	0.0	0.010	0.002	0.0080	

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Results for 100 year +40% CC 1440 minute summer. 1680 minute analysis at 30 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute summer	S1	750	4.385	0.037	0.0	0.0066	0.0000	OK
1440 minute summer	S2	750	4.385	0.111	0.2	0.0255	0.0000	OK
1440 minute summer	STORAGE	30	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute summer	S1	1.001	S2	0.0	-0.008	0.004	0.0227	
1440 minute summer	S2	Orifice		0.2				2.9
1440 minute summer	STORAGE	1.000	S1	0.0	0.000	0.000	0.0040	

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Results for 100 year +40% CC 1440 minute winter. 1680 minute analysis at 30 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute winter	S1	30	4.348	0.000	0.0	0.0000	0.0000	OK
1440 minute winter	S2	720	4.317	0.043	0.1	0.0099	0.0000	OK
1440 minute winter	STORAGE	30	4.400	0.000	0.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute winter	S1	1.001	S2	0.0	0.000	0.000	0.0070	
1440 minute winter	S2	Orifice		0.1				3.2
1440 minute winter	STORAGE	1.000	S1	0.0	0.000	0.000	0.0000	

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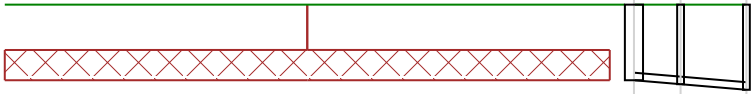
Node Name		STORAGE S1		STORAGE S2
A4 drawing Hor Scale 500 Ver Scale 100 Datum (m) -1.000				
Link Name		1.00	1.001	
Section Type		100r	100mi	
Slope (1:X)		59.3	58.8	
Cover Level (m)		5.400	5.400	5.400
Invert Level (m)		4.400 4.348	4.348	4.274
Length (m)		3.08	4.353	

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