Consulting Civil Engineers

Foul and Surface Water Drainage Report

14-20 South Street, Worthing

Planning Ref: AWDM/1906/22

For

Craig Developments Ltd

Rev – **PL4**

Reference **C2994**

Date **April 2024**

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PL1	03/04/2024	Issued for planning	SFC	CS
PL2	10/06/2024	Revised to LLFA Comments	SFC	CS
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PL4	05/09/2024	Revised to LLFA Comments	SFC	CS

Richard Cobden House, Lion Street, Chichester, West Sussex, PO19 1LW
Tel: 01243 933253 E: mail@cgscivils.co.uk W: www.cgscivils.co.uk

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1 Introduction

1.1.1 CGS Civils Ltd has been appointed to undertake a drainage strategy report for a proposed development at 14-20 South Street (Former Debenhams and Iceland car park).

1.1.2 The purpose of this drainage strategy is to demonstrate how the development area can be satisfactorily drained without increasing flood risk onsite and elsewhere in order to clear Conditions 10 and 11 of the planning consent for application number AWDM/1906/22 dated 12th of December 2023, namely:

Condition 10:

Development shall not commence, other than works of site survey and investigation, until full details of the proposed surface water drainage scheme have been submitted to and approved in writing by the Local Planning Authority. The design should follow the hierarchy of preference for different types of surface water drainage disposal systems as set out in Approved Document H of the Building Regulations, and the recommendations of the SuDS Manual produced by CIRIA/ No part of the development shall be occupied until the complete surface water drainage system serving the property has been implemented in accordance with the agreed details and the details so agreed shall be maintained in good working order in perpetuity. Details shall be supported by an assessment of the risks to controlled waters. The scheme shall be implemented as approved and in accordance with any timetable/phasing agreed as part of the approved scheme.

Condition 11:

No dwelling shall be occupied until full details of the maintenance and management of the surface water drainage system is set out in a site-specific maintenance manual and submitted to, and approved in writing, by the Local Planning Authority. Upon completed construction of the surface water drainage system, the owner or management company shall strictly adhere to and implement the recommendations contained within the manual.

1.1.3 The existing site consists of a former Debenhams store and a former Iceland car park. The proposed development will consist of commercial floor space and 80 residential flats. The proposed development is located as OS Grid Reference TQ 14970 02490and has the post code BN11 3AE.

Fig 1. Site Location



2 Executive Summary:

2.1.1 The foul drainage is to utilise the existing foul connection to the public sewer network that emerges from the southern end of the property. Southern Water have confirmed that their network has capacity to serve this development.

2.1.2 The surface water runoff generated by the roof is to utilise the existing private drainage system, which discharges to the local public surface water sewer. This is in accordance with the FRA produced by RPS in October 2022 which states *"Given that the proposed works comprise the conversion of the existing property and rooftop extension only, with no external alterations to the building footprint or drainage system, there will be no off-site increase in flood risk as a result of the proposed works and post-development runoff rates would match existing rates when no mitigation measures are implemented. It is therefore considered not practical to include significant SuDS measures in the proposed scheme"*

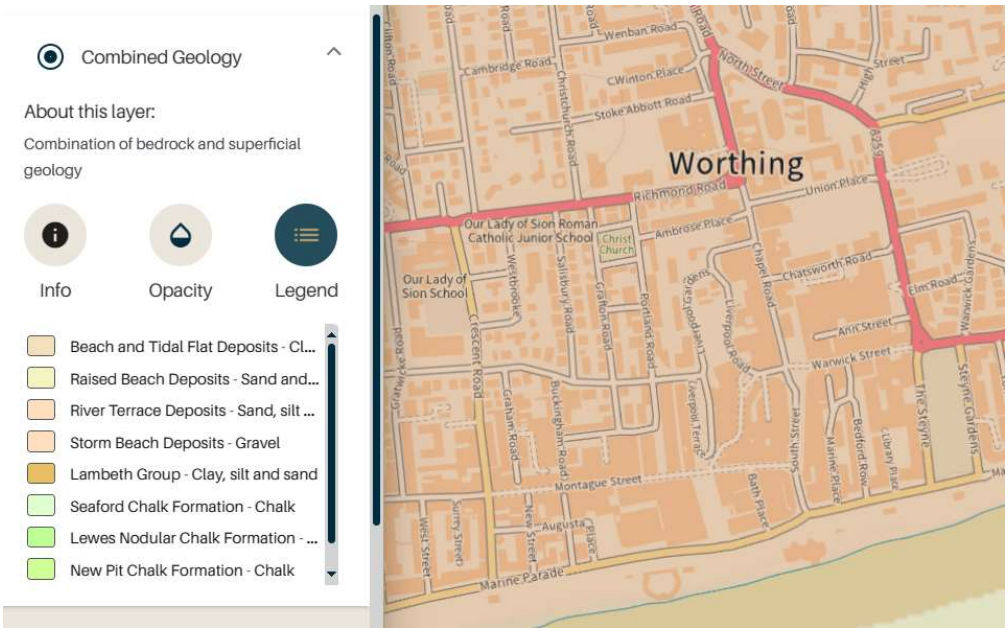
2.1.3 In order to accommodate flows generated in the FEH22 models, the southernmost existing connection to the surface water sewer will need to be upgraded to a 225mm diameter pipe.

3 Site Geology

3.1 British Geological Survey information

3.1.1 The British Geological Survey suggests the bedrock geology to comprise the Lewes Nodular Chalk Formation, overlain by superficial River Terrace Deposits.

Fig 2. British Geological Survey



3.2 Geological Assessment

3.2.1 At the time of preparing this report, no intrusive investigations were available, however the nature of the site's constraints will mean that the geological properties of the site will not affect the proposals.

4 Existing Drainage

4.1.1 Surface water drainage from the roof of the Iceland Car park is collected in private drains and discharges to the public surface water sewer network in South Street.

4.1.2 It is assumed that the Debenhams building discharges roof runoff into the surface water sewer network, though this pipework is concealed beneath the building. There is a possibility that it may also discharge into the foul network, particularly to the rear (eastern) side of the property.

4.1.3 Sewer records were obtained and a CCTV survey was carried out to the accessible drains, though further investigative works are required. The proposals assume a worst case where no further existing connections are available.

5 Proposed Drainage Strategy

5.1 SuDS Hierarchy

5.1.1 All options for the destination of run-off generated on site have been assessed in line with the SuDS hierarchy as set out in Building Regulations Part H document and DEFRA's Draft National Standards for SuDS.

5.1.2 Due to the lack of external space it is not possible to discharge surface water to ground.

5.1.3 It is not considered practical to install rainwater harvesting methods or green roofs, largely due to much of the roof space being given over to solar panels and the publicly accessible Sky Lounge. Planters will be provided on the top floor which will themselves intercept some rainfall.

5.1.4 It is therefore necessary to continue to discharge surface water to the public surface water sewerage network, as the site currently does.

Table 1. SuDS Hierarchy

Discharge Destination	
Rainwater Harvesting	No
Discharge to Ground	No
Discharge to Watercourse	No
Discharge to Surface Water Sewer	Yes
Discharge to Other Sewer	No

5.2 Surface Water Drainage

5.2.1 For the reasons described above, surface water runoff will discharge to the public surface water sewer network.

5.2.2 The proposed catchment area of the roof is 2050m², which is identical to the existing catchment area.

5.2.3 Due to the lack of space below ground or on the roof, it is not possible to implement attenuation or associated storage beyond planters on the roof.

5.2.4 There will be no increase in impermeable area, therefore it is proposed that runoff is discharged unrestricted into the public surface water sewer as it currently does.

5.2.5 Surface water is currently discharged to the sewer at two points. The existing 150mm diameter at the southern end of the building will need to be upgraded to a 225mm pipe but only to accommodate the 1 in 100 year storm event plus 45%. The connection of unknown diameter serving the northern half of the roof area will suffice, subject to confirmation of its diameter and gradient.

5.2.6 Both connections will accommodate flows from the critical 1 in 100 year design storm plus an allowance of 45% for the predicted effects of climate change (subject to final confirmation of the gradients of the existing connections) using the FEH22 data.

5.2.7 Proposals are shown in Appendix B of this report.

5.2.8 Hydraulic calculations have been carried out and can be found at Appendix C. While the FRA presented flow rates produced during 60 minute storms of various return periods, the Design Calculations herewith are based on critical storm durations and therefore are in excess of those shown in the FRA. In any case, however the simulations are defined, the volumes will be identical before and after the approved works.

5.2.9 Total combined critical discharge rates pre and post development are summarised as follows:

Existing critical 1 in 2 year storm discharge rate (total) = 38.0L/s
Proposed critical 1 in 2 year storm discharge rate (total) = 36.1L/s

Existing critical 1 in 30 year storm discharge rate (total) = 100.9L/s
Proposed critical 1 in 30 year storm discharge rate (total) = 96.1/s

Existing critical 1 in 30 year storm (+35%) discharge rate (total) = 125.7L/s
Proposed critical 1 in 30 year storm (+35%) discharge rate (total) = 129.4/s

Existing critical 1 in 100 year storm discharge rate (total) = 118.3L/s
Proposed critical 1 in 100 year storm discharge rate (total) = 120.8L/s

Existing critical 1 in 100 year storm (+45%) discharge rate (total) = 147.8L/s (plus 2.9m³ flood)
Proposed critical 1 in 100 year storm (+45%) discharge rate (total) = 172.7L/s (zero flooding)

5.2.10 The marginal increase in flow rates for the 1 in 30(+35%) storm and above is due to the need for a 225mm diameter pipe to replace the existing 150 connection that currently would flood in the event of a critical 1 in 100 year storm (+45%). Though this alleviates the risk of flooding, it necessarily causes an increase in flow rate as waters that would have previously left the system (to cause flooding) are instead channelled through the system.

5.3 Water Quality

5.3.1 A key requirement of any SuDS system is that it protects the receiving water body from the risk of pollution.

5.3.2 Frequent and short duration rainfall events are those that are most loaded with potential contaminants (silts, fines, heavy metals, and various organic and inorganic contaminants) Therefore the first 5-10mm of rainfall should be adequately treated with SuDS.

5.3.3 The new SuDS Manual (Ciria C753, November 2015) introduces slightly different approach compared to the previous version for the water quality management of surface water. The Manual describes risks posed by the surface water runoff to the receiving environment as a function of:

- The pollution hazard at a particular site (i.e., the pollution source)
- The effectiveness of SuDS treatment components in reducing levels of pollutants to environmentally acceptable levels
- The sensitivity of the receiving environment

5.3.4 The EA website indicates that the site does not lie within a Source Protection Zone.

5.3.5 The recommended approaches for water quality risk management are given in the SuDS Manual Table 26.1.

Table 26.1 from SuDS manual. Approaches to Water Quality Risk Management

Table 26.1 Approaches to Water Quality Risk Management			
Design method	**Hazard Characterisation**	**Risk Reduction**	
		For Surface Water	**For Groundwater**
Simple Index Approach	Simple pollution hazard indices based on land use (Table 26.2)	Simple SuDS hazard mitigation indices (Table 26.3)	Simple SuDS hazard mitigation indices (Table 26.4)
Risk Screening	Factors characterising traffic density and extent of infiltration likely to occur (Table 26.5)	N/A	Factors characterising unsaturated soil depth and type, and predominant flow type through the soils (Table 26.5)
Detailed Risk Assessment	Site specific information used to define likely pollutants and their significance	More detailed, component specific performance information used to demonstrate that the proposed SuDS components reduce the hazard to acceptable levels	
Process-based treatment modelling	Time series rainfall used with generic pollution characteristics to determine statistical distributions of likely concentrations and loadings in the runoff	Models that represent the treatment processes in the proposed SuDS components give estimates of reductions in even mean discharge concentrations and total annual load reductions delivered by the system	

5.3.6 As per Table 26.1 Simple Index approach will be used as a design method for this site.

5.3.7 Table 26.2 will provide hazard classification of different land uses. The land uses for the surface water drainage for this site are.

- Residential Roofs
- Individual Property driveways and residential car parks
- Low traffic roads

5.3.8 To deliver adequate treatment, the selected SuDS components should have a total pollution mitigation index for each contaminant type that equals or exceeds the pollution hazard index for each contaminant type. Therefore, the following must be achieved for the surface running off the site.

Total SuDS mitigation index >=pollution hazard index

5.3.9 Pollution Hazard Indices are given for different land uses in Table 26.2 of the SuDS manual;

Table 26.2 from SuDS manual. Pollution Hazard Indices for Different Land Use Classifications

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 (e.g., cul-de-sacs, homezones and general access roads) and non-residential car parking with infrequent change (e.g., schools, offices) i.e., < 300 traffic movements/day	Low	0.5	0.4	0.4
Commercial yard and delivery areas, non-residential car parking with frequent change (e.g., hospitals, retail), all roads except low traffic roads and trunk roads/motorways	Medium	0.7	0.6	0.7
Sites with heavy pollution (e.g., 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	High	0.8	0.8	0.9

5.3.10 From Table 26.2 the following information is tabulated in Table 1

Table 1: **Pollution hazard index and destination of runoff for the proposed site**

Table 3: Pollution Hazard Index and Destination of runoff for the proposed Site					
Land Use	**Destination of Runoff**	**Pollution Hazard Level**	**Total Suspended Solids**	**Metals**	**Hydrocarbons**
Residential Roof	Surface Water	Very Low	0.2	0.2	0.05

5.3.11 The SuDS mitigation index will be obtained from Table 26.3 (for surface water) of the SuDS manual.

Table 26.3 from SuDS manual. Indicative SuDS Mitigation Indices for discharges to surface waters.

5.3.12 SuDS mitigation indices are tabulated in Table 5 as follows:

Table 26.3 Indicative SuDS mitigation indices for discharges to surface waters			
	Mitigation Indices		
Type of SuDS Components	**TSS**	**Metals**	**Hydrocarbons**
Filter Strip	0.4	0.4	0.5
Filter Drain	0.4	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	0.7	0.7	0.5
Wetland	0.8	0.8	0.8
Proprietary treatment systems	These must demonstrate that they can address each of the contaminant types to acceptable levels for inflow concentrations relevant to the contributing drainage area		

5.3.13 Site constraints mean that there are no external areas available for the installation of SuDS measures. As there is no increase in roof area, this represent a continuation of the current situation except that maintenance will now take place.

Table 4: SuDS mitigation index

Table 4 Mitigation Indices						
Runoff Source	**Destination of Runoff**	**Mitigation Index Source**	**Type of SuDS Component**	**Total Suspended Solids (TSS)**	**Metals**	**Hydrocarbons**
Residential Roof	Surface water	Table 26.3 (for surface waters)	None	-	-	-

5.4 Foul water drainage

5.4.1 The foul water will discharge into the local foul water sewer via the existing connection that emerges from the southern end of the site, subject to confirmation of the existing gradients of this connection.

5.4.2 Southern Water have confirmed that they have sufficient capacity for the development; 80 residential units will generate 3.7L/s which can be accommodated by the existing pipework on the property subject to confirmation of gradient.

5.4.3 The CCTV survey found that there is a need for this connection to be jetted as well as some defects that should be repaired as part of the works. The CCTV survey report is in Appendix D of this report.

5.5 Construction Phase Drainage

5.5.1 It is an offence to cause or knowingly permit the entry of any polluting, poisonous or noxious material in the water environment. If the pollution is serious enough to lower the ecological status of the water body as set out in terms by the Water Framework Directive (2000/60/EC) than prosecution may occur.

5.5.2 Remediation of any damage caused will not require the polluter to be prosecuted first. If the water pollution is serious enough to be classed an environmental damage, the damage will require to be remediated such that the area is returned to the condition it would have been in if the damage had not occurred.

5.5.3 If any pollution has not been reported or the polluter has not taken actions to prevent any further damage; they would then be causing an offence. Third parties (e.g., Private water supply users, landowners, recreation users and the public) who may be affected by possible damage may also report the risk of any environmental damage to the enforcing authority.

5.5.4 The principles of SuDS (Sustainable Drainage Systems) shall be applied to all components of design and construction regarding surface water management. Any design or site works that may impact on the site drainage or the water quality shall:

- Soakaway where soils allow
- Consider and manage erosion
- Remove pollutants in surface water
- Retain any silts on site and prevent silts from discharging to watercourses or drains
- Keep runoff rates at existing greenfield runoff
- Prevent accidental spillages reaching watercourse

5.5.5 Pollution will be controlled via the use of catchpit manholes and geotextiles.

5.5.6 Any potential hazardous substances will be within a controlled compound with a separate drainage system that will contain a penstock valve / containment kit in the event of a spillage.

6 Maintenance

6.1 Introduction

6.1.1 During construction, the Contractor will be responsible for maintaining the drainage and any SuDS (Sustainable Drainage Systems). Upon handover, the developer will appoint a maintenance firm who will take on the responsibility of these duties as laid out in this report.

6.1.2 The maintenance schedule for the proposed development will cover private drainage components as SuDS features are not possible due to space constraints.

6.2 General Drainage Maintenance Specification

6.2.1 Inlet Structures and Inspection Chambers

- Inlet structures such as rainwater downpipes, road gullies and channel drains should be free from obstruction at all times
- Inspection Chambers and Rodding Eyes are used on bends or where pipes come together. They allow access and cleaning to the system if necessary.

Inlet Structures and Inspection Chambers	
Regular Maintenance	**Frequency**
Inlet Structures Inspect rainwater downpipes, channel drains and road gullies, removing obstructions and silt as necessary. Check that there is no physical damage. Strim vegetation 1m min surround to structures and keep area free from silt and debris	Monthly
Inspections Chambers and below ground control chambers. Remove cover and inspect, ensuring that the water is flowing freely and that the exit route for water is unobstructed. Remove debris and silt. Undertake inspection after leaf fall in Autumn	Annually
Occasional Maintenance Check topsoil levels are 20mm above edges of chambers to avoid mower damage.	As necessary
Remedial Work Repair physical damage if necessary	As required

6.2.2 Below ground drainage pipes

- Below ground drainage pipes convey water to the wider network. They should always be free from obstruction to allow free flow.

Below Ground Drainage Pipes	
Regular Maintenance	**Frequency**
Inspect and identify any areas that are not operating correctly. If required, take remedial action.	Monthly for 3 months then annually
Remove debris from the catchment surface (where it may cause risks to performance)	Monthly
Remove sediment from pre-treatment inlet structures and inspection chambers.	Annually or as required
Maintain vegetation to designed limits within the vicinity of below ground drainage pipes and tanks.	Monthly or as required
Remedial Work Repair physical damage if necessary	As required
Monitoring Inspect all inlets, outlets and vents to ensure that they are in good conditions and operating as designed.	Annually
Survey inside of pipe runs for sediment build up and remove if necessary.	Every 5 years or as required

7 Summary and Conclusions

7.1.1 CGS Civils has been instructed by to produce a Drainage statement under National Planning Policy Framework (NPPF) to support the Planning Application for the development of 80 residential units and commercial space at 14-20 South Street, Worthing.

7.1.2 The Surface Water will discharge to the public surface water network via two existing connections to the local public sewerage network, in accordance with the approved FRA, subject to confirmation of levels, diameters and gradients. The Southernmost connection will be upgraded from a 150mm diameter pipe to a 225mm diameter.

7.1.3 The Foul water will discharge into the public foul sewer network via the existing pipework that emerges from the southern end of the property. Southern Water have confirmed that capacity is available.

7.1.4 The report has demonstrated that the proposed drainage measures ensure that suitable means of surface water and foul drainage can be achieved for the proposed development.

8 Appendices

8.1 Appendix A – Site Plan

CITYZEN IS THE TRADING NAME FOR CITYZEN LIMITED; REGISTERED OFFICE: PRESTON PARK HOUSE, BRIGHTON, BN1 6SB; REGISTERED NUMBER: 10634993

Fire Safety Notes:

Drawings to be read in conjunction with
Planning Fire Safety Strategy report.

Dry riser inlets provided to South street & Marine
Place entrances serving the residential building above.
Dry riser designed & installed to BS9990 to be further developed at later design stage.

The dry riser to staircore 1 serves all floors & is designated a firefighting core.
The dry riser to staircore 3 serves ground to 3rd floor.

Sprinklers are to be provided throughout the development to BS9251. All flats will be sprinklered and flats and internal corridors form 60 minute fire compartments.


2
4
6
8
12
22 to 26
ALLEYWAY TO SOUTH STREET
ELECTRICITY SUBSTATION
ELECTRICITY SUBSTATION
DRY RISER INLET
Accommodation Entrance 1
Entrance Lobby
Reception/ Concierge
576.4 M²
SERVICE RISER
Retail Shell
PLANT ROOM
14.0 M²
LOBBY
HIGH LEVEL FIRE RATED SLIDING SHUTTER DOOR
3000
Retail Shell
Retail Shell
Retail Shell

8.2 Appendix B – Drainage Layout

DRAINAGE LEGEND

EXISTING FEATURES

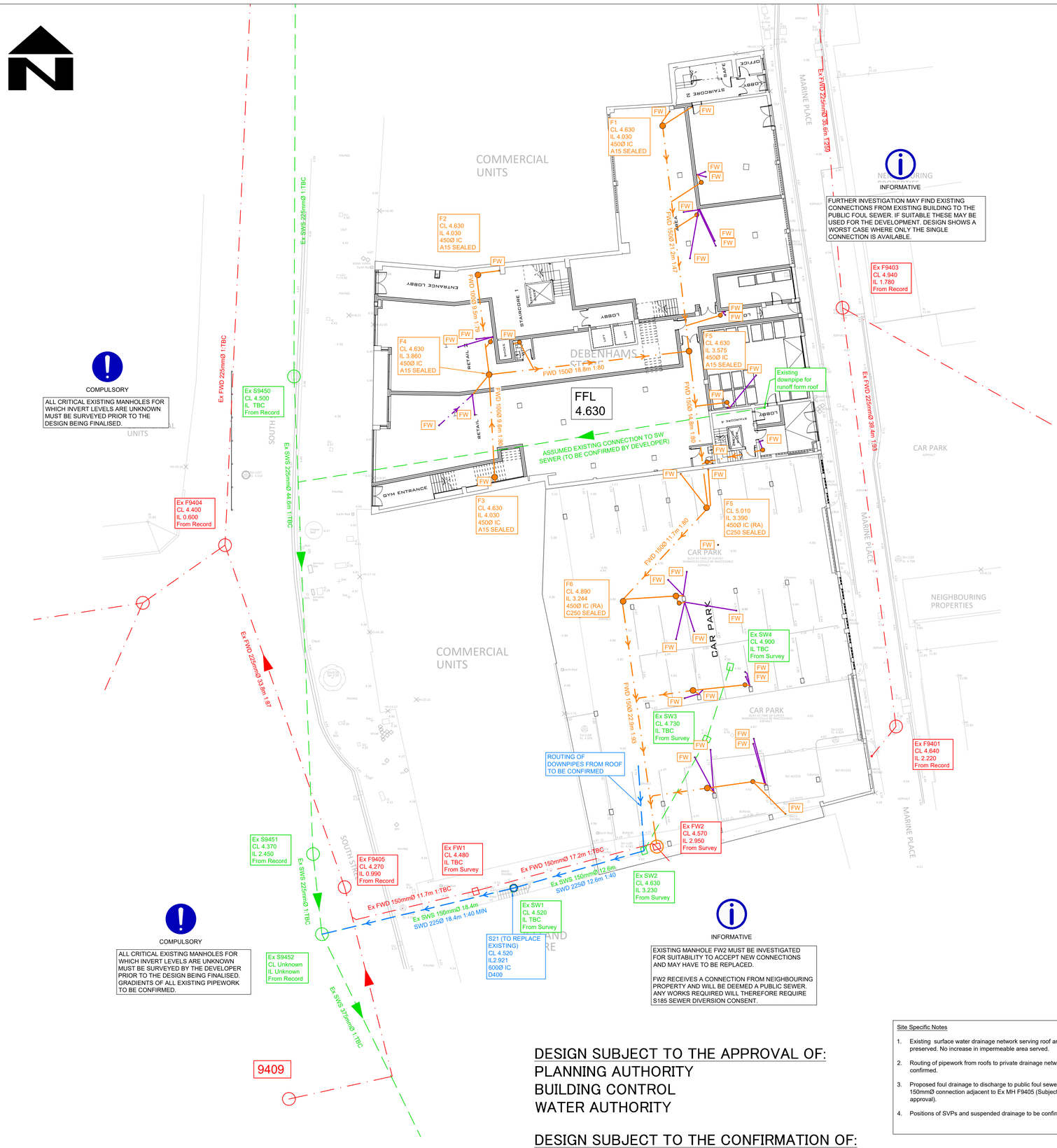
- Ex FWD — Existing foul water sewer/drain and manhole
- Ex SWD — Existing surface water sewer/drain and manhole
- Existing foul/surface water sewer/drain and manhole to be abandoned

PROPOSED FEATURES

- Suspended Foul Drainage
- FWD — Foul Drainage
- Foul Rising Main
- SWD — Surface Water Drainage
- Pipe crossing (thickening denotes pipe above)
- CD — Channel drain
- Rainwater pipe
- Storm water access chamber (300Ø)
- Storm water inspection chamber (450Ø)
- Storm water manhole (1050Ø)
- Storm water catchpit chamber (450Ø)
- Storm water rodding eye
- Road gully
- Yard gully
- FW • — Soil stack (type TBC by architect/m&e engineer)
- Foul water access chamber (300Ø)
- Foul water inspection chamber (450Ø)
- FG ■ — Trapped foul gully
- 00.000 — Finished floor level
- 100Ø 4.5m 1:100 Z BED — Pipe info - diameter, length, gradient, bedding type

ABBREVIATIONS

MH	- MANHOLE
IC	- INSPECTION CHAMBER
AC	- ACCESS CHAMBER
CP	- CATCHPIT
BC	- BRAKE CHAMBER
RE	- RODDING EYE
IL	- INVERT LEVEL
SL	- SUMP LEVEL
RA	- RESTRICTED ACCESS COVER
CL	- COVER LEVEL
TL	- TOP OF CELLULAR SA
BL	- BASE OF CELLULAR SA
FL	- FORMATION LEVEL



COMPULSORY

ALL CRITICAL EXISTING MANHOLES FOR WHICH INVERT LEVELS ARE UNKNOWN MUST BE SURVEYED PRIOR TO THE DESIGN BEING FINALISED.

INFORMATIVE

FURTHER INVESTIGATION MAY FIND EXISTING CONNECTIONS FROM EXISTING BUILDING TO THE PUBLIC FOUL SEWER. IF SUITABLE THESE MAY BE USED FOR THE DEVELOPMENT. DESIGN SHOWS A WORST CASE WHERE ONLY THE SINGLE CONNECTION IS AVAILABLE.

COMPULSORY

ALL CRITICAL EXISTING MANHOLES FOR WHICH INVERT LEVELS ARE UNKNOWN MUST BE SURVEYED BY THE DEVELOPER PRIOR TO THE DESIGN BEING FINALISED. GRADIENTS OF ALL EXISTING PIPEWORK TO BE CONFIRMED.

INFORMATIVE

EXISTING MANHOLE FW2 MUST BE INVESTIGATED FOR SUITABILITY TO ACCEPT NEW CONNECTIONS AND MAY HAVE TO BE REPLACED.

FW2 RECEIVES A CONNECTION FROM NEIGHBOURING PROPERTY AND WILL BE DEEMED A PUBLIC SEWER. ANY WORKS REQUIRED WILL THEREFORE REQUIRE S185 SEWER DIVERSION CONSENT.

DESIGN SUBJECT TO THE APPROVAL OF:

PLANNING AUTHORITY
BUILDING CONTROL
WATER AUTHORITY

DESIGN SUBJECT TO THE CONFIRMATION OF:

FOUL DRAINAGE POINTS
ROOF DRAINAGE ROUTING
LOCATION AND DEPTH OF EXISTING UTILITIES

Site Specific Notes

1. Existing surface water drainage network serving roof areas to be preserved. No increase in impermeable area served.
2. Routing of pipework from roofs to private drainage network to be confirmed.
3. Proposed foul drainage to discharge to public foul sewer via existing 150mmØ connection adjacent to Ex MH F9405 (Subject to S106 approval).
4. Positions of SVPs and suspended drainage to be confirmed.

STANDARD DRAINAGE NOTES

1. DO NOT SCALE FROM THIS DRAWING, REFER TO FIGURED DIMENSIONS ONLY. THE CONTRACTOR SHOULD CHECK ALL DIMENSIONS ON SITE.
2. ALL DIMENSIONS IN MILLIMETRES AND ALL LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
3. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECT AND ENGINEERING DETAILS, DRAWINGS AND SPECIFICATIONS.
4. ANY DISCREPANCIES SHOULD BE REPORTED TO THE ARCHITECT AND/OR ENGINEER IMMEDIATELY, SO THAT CLARIFICATION CAN BE SOUGHT PRIOR TO THE COMMENCEMENT OF WORK.
5. BEFORE COMMENCING CONSTRUCTION THE CONTRACTOR MUST CHECK THE INVERT LEVELS OF EXISTING SEWERS TO WHICH CONNECTIONS ARE MADE. IN ADDITION THE CONTRACTOR MUST LOCATE AND DETERMINE INVERT LEVELS OF THE EXISTING SPURS TO WHICH CONNECTIONS ARE PROPOSED. ANY DISCREPANCIES ARE TO BE NOTIFIED TO THE ENGINEER IMMEDIATELY, PRIOR TO CONSTRUCTION.
6. ALL DRAINAGE WORKS SHOULD COMMENCE AT THE PROPOSED DOWNSTREAM CONNECTION POINT, THE WORKS CONTINUING UPSTREAM FOLLOWING CONFIRMATION OF THE TIE-IN INVERT LEVELS TO THE ENGINEER. CONNECTIONS TO MANHOLES OR LARGER SIZED PIPES ETC. SHOULD BE SOFFIT TO SOFFIT UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER, IF THIS IS NOT POSSIBLE INFORM THE ENGINEER IMMEDIATELY.
7. COVER LEVELS SHOWN ARE APPROXIMATE. COVERS AND FRAMES SHALL BE SET TO FINISHED GROUND LEVELS AND FALLS.
8. ALL UN-REFERENCED PIPES ARE TO BE 100mm DIA
9. ALL PIPES TO BE ADOPTED, OR CONNECTING TO ADOPTED SEWERS, TO BE VITRIFIED CLAY TO BS EN 295 AND BS65 (SWS ONLY), OR CONCRETE PIPES TO BE EN 1916 AND BS5911:PART 1.
10. ROAD GULLY OUTLET PIPES ARE TO BE 150mm DIA. WITH CONCRETE SURROUND AND FLEXIBLE JOINTS. ALL GULLIES SHALL BE FITTED WITH GRADE D400 GRATINGS AND FRAMES TO BS EN124, UNLESS OTHERWISE STATED.
11. ALL ADOPTABLE SEWERS SHALL BE CONSTRUCTED TO THE STANDARDS AND SPECIFICATION LAID DOWN DOWN IN 'SEWERS FOR ADOPTION' 6th EDITION, WITH A VIEW TO ADOPTION UPON COMPLETION OF WORKS.
12. ALL PRIVATE DRAINAGE TO BE IN ACCORDANCE WITH THE BUILDING REGULATIONS APPROVED DOCUMENT PART-H, AND TO THE SATISFACTION OF THE BUILDING CONTROL INSPECTOR.
13. THE CONTRACTOR IS TO KEEP A RECORD OF ANY VARIATIONS MADE ON SITE, INCLUDING THE RELOCATION OF SEWERS OR DRAINS, SO THAT AN AS CONSTRUCTED DRAWING CAN BE PREPARED UPON COMPLETION OF THE PROJECT.
14. STUB CONNECTIONS TO ADOPTABLE MANHOLES SHALL BE MADE FROM VITRIFIED CLAY AND CONSIST OF TWO ROCKER PIPES LAID AT THE SAME GRADIENT AS THE UP OR DOWNSTREAM PIPE.
15. IF ANY SUB SOIL DRAINAGE SYSTEMS ARE UNCOVERED DURING THE WORKS CONTACT THE ENGINEER FOR INSTRUCTIONS. SUB SOIL DRAINS ARE TO BE DIVERTED AROUND NEW WORKS AND CONNECTED INTO THE SURFACE WATER.
16. NO PRIVATE AREAS ARE TO DRAIN ONTO ADOPTABLE AREAS AND VICE VERSA.
17. ALL EXISTING MANHOLE COVER'S, GULLIES, ETC, ARE TO BE RAISED/LOWERED TO SUIT NEW LEVELS.
18. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONFIRM THE LOCATION AND DEPTH OF ALL EXISTING SERVICES AND UTILITIES THAT MAY BE PRESENT
19. UPON COMPLETION BUT PRIOR TO HANDOVER, CONTRACTOR TO CARRY OUT FULL CCTV SURVEY OF DRAINAGE SYSTEM WHICH IS TO BE REVIEWED BY ENGINEER TO ENSURE SATISFACTORY INSTALLATION
20. MANHOLE AND CHAMBER COVER GRADES:

- 'A15' IN ALL LANDSCAPED AREAS AND ON FOOTPATHS
- 'B125' IN ALL DRIVEWAYS
- 'C250' IN PRIVATE PARKING AREAS
- 'D400' IN CARRIAGEWAY/ACCESS ROAD

Prefixed to drawing numbers shall signify the following:-

PL = PLANNING	Shall not be used for contract or construction purposes
P = PRELIMINARY	Shall not be used for contract or construction purposes
T = TENDER	Shall not be used for construction purposes
C = CONSTRUCTION	These are the only drawings that shall be used for construction purposes
R = RECORD	Record of actual completed work

REV	DATE	DESCRIPTION	BY	CHK	APP
PL3	05.08.24	Proposed design revised to FEH22	SFC	CS	CS
PL2	10.06.24	Existing surface water revised	SFC	CS	CS
PL1	03.04.24	ISSUED FOR PLANNING	SFC	CS	CS

cgs civils
Consulting Civil Engineers

CLIENT: CRAIG CONSTRUCTION

ARCHITECT: CITYZEN

JOB TITLE: 14-20 SOUTH STREET WORTHING

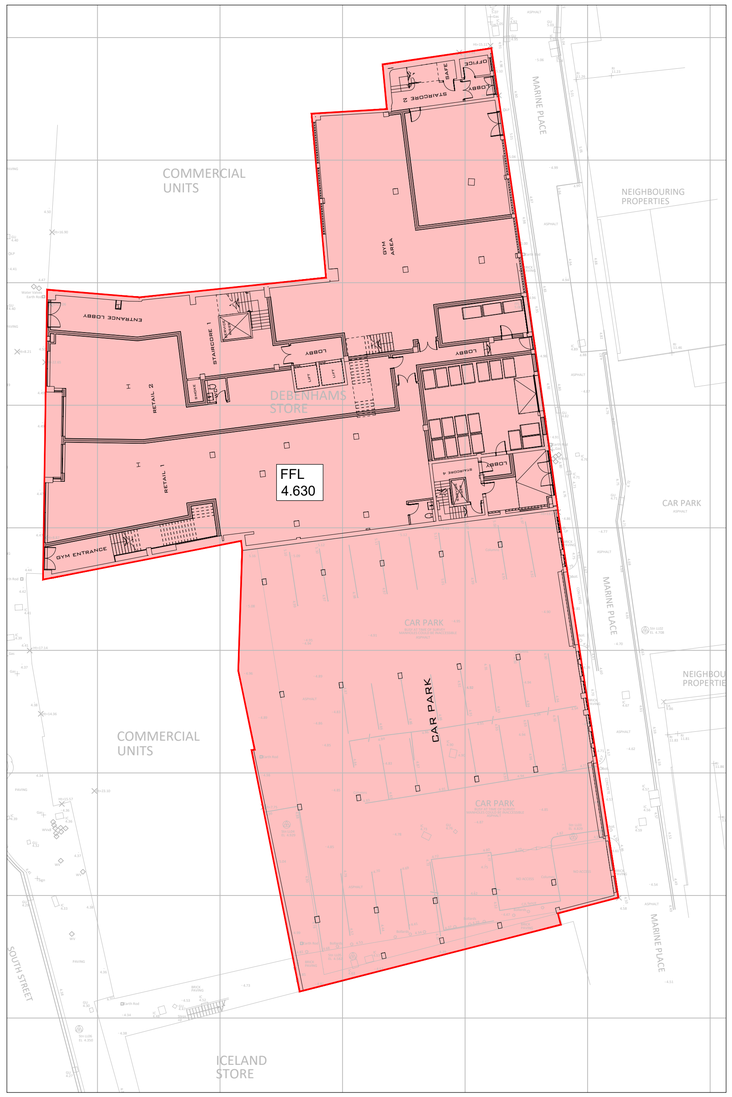
DRAWING TITLE: PROPOSED DRAINAGE LAYOUT

DRAWN	ENGINEER	CHECKED	APPROVED
SFC	SFC	CS	CS

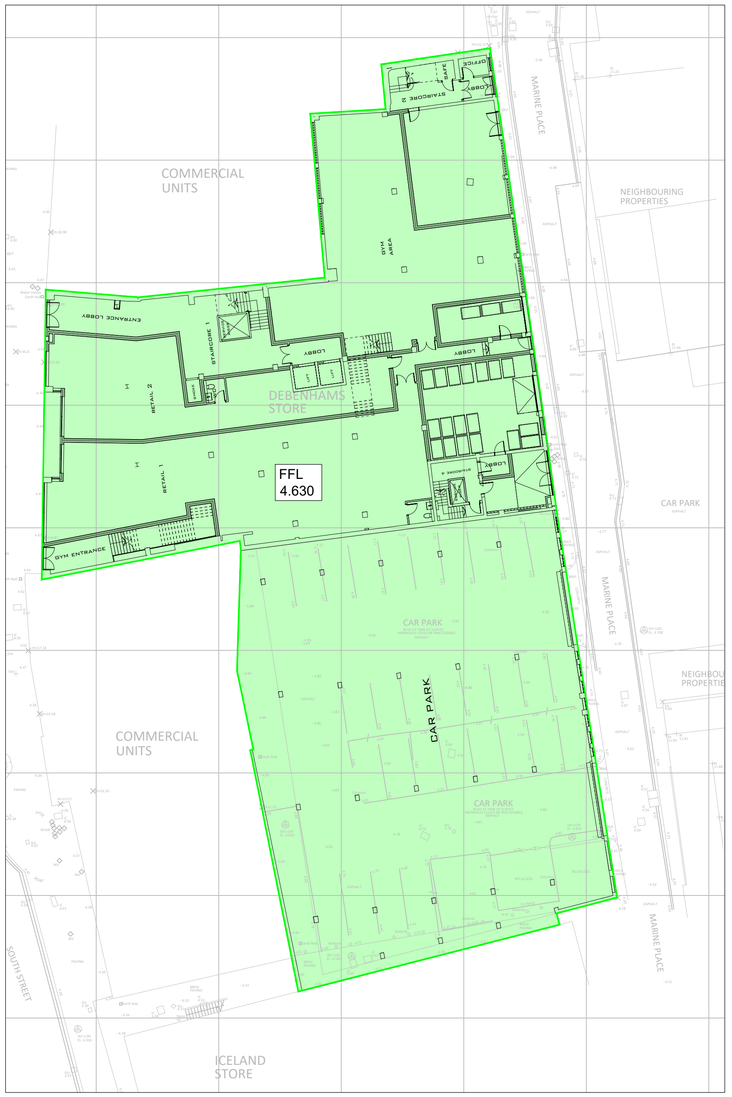
DATE	SCALE @ A1
Apr' 24	1:200

JOB No.	STATUS	DRAWING No.	REV.
C2994	PL	101	3

FOR PLANNING ONLY



EXISTING IMPERMEABLE AREAS



PROPOSED IMPERMEABLE AREAS

Impermeable drained areas

Total existing impermeable drained area 2050m²

Proposed impermeable drained areas 2050m²

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- 'B125' IN ALL DRIVEWAYS
- 'C250' IN PRIVATE PARKING AREAS
- 'D400' IN CARRIAGEWAY/ACCESS ROAD

Prefixed to drawing numbers shall signify the following:-

PL = PLANNING	**Shall not be used for contract or construction purposes**
P = PRELIMINARY	**Shall not be used for contract or construction purposes**
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REV	DATE	DESCRIPTION	BY	CHK	APP
PL1	03.04.24	ISSUED FOR PLANNING	SFC	CS	CS

cgs civils
Consulting Civil Engineers

CLIENT: CRAIG CONSTRUCTION

ARCHITECT: CITYZEN

JOB TITLE: 14-20 SOUTH STREET WORTHING

DRAWING TITLE: IMPERMEABLE AREAS

DRAWN	ENGINEER	CHECKED	APPROVED
SFC	SFC	CS	CS

DATE	SCALE @ A1
Apr' 24	1:250

JOB No.	STATUS	DRAWING No.	REV.
C2994	PL	102	1

FOR PLANNING ONLY



EXCEEDANCE ROUTE PLAN

BLUE ARROWS SHOW ROUTE OF EXCEEDANCE FLOWS FROM PROJECTED POINTS OF EMERGENCE TOWARDS DIRECTION OF FALL.

STANDARD DRAINAGE NOTES

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REV	DATE	DESCRIPTION	BY	CHK	APP
PL2	10.06.24	Existing drains revised	SFC	CS	CS
PL1	03.04.24	ISSUED FOR PLANNING	SFC	CS	CS

cgs civils
Consulting Civil Engineers

CLIENT: CRAIG CONSTRUCTION

ARCHITECT: CITYZEN

JOB TITLE: 14-20 SOUTH STREET WORTHING

DRAWING TITLE: EXCEEDANCE ROUTES

DRAWN	ENGINEER	CHECKED	APPROVED
SFC	SFC	CS	CS

DATE	SCALE @ A1
Apr' 24	1:250

JOB No.	STATUS	DRAWING No.	REV.
C2994	PL	103	2

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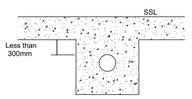
3. Pipes laid at shallow depths under buildings

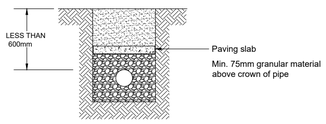


Where the crown of the pipe is within 300mm of the underside of the slab, the pipework should be surrounded with 150mm concrete as an integral part of the floor slab

Where pipes are surrounded in concrete, an 18mm compressible board, e.g. fibreboard or polystyrene should be placed around the pipe at each joint.

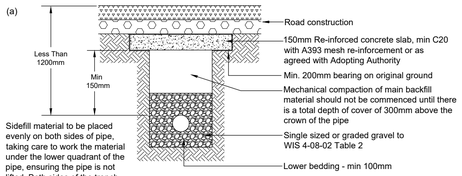
Protection for pipes

1. Pipes laid at shallow depths in non trafficked areas

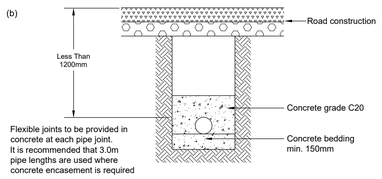


Pipes laid in non-trafficked areas, e.g. in gardens with less than 600mm of cover, should be protected against damage by placing paving slabs or similar over them across the whole width of the trench. A layer of granular material of 75mm min thickness must be laid between pipes and slabs.

2. Pipes laid at shallow depths in Adoptable Trafficked areas

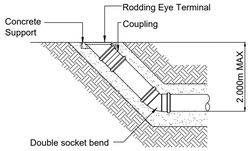


Sidefill material to be placed evenly on both sides of pipe, taking care to work the material under the lower quadrant of the pipe, ensuring the pipe is not lifted. Both sides of the trench should be filled simultaneously to avoid horizontal movement of the pipe

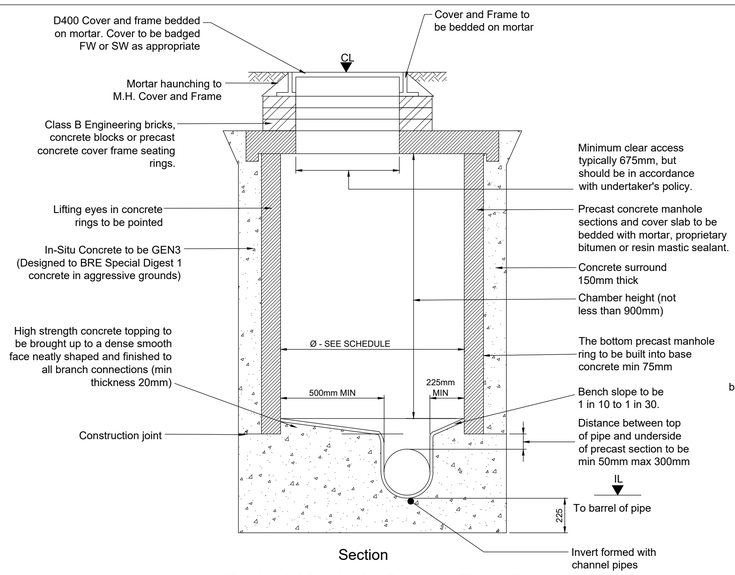


Flexible joints to be provided in concrete at each pipe joint. It is recommended that 3.0m pipe lengths are used where concrete encasement is required

Typical pipe protection details



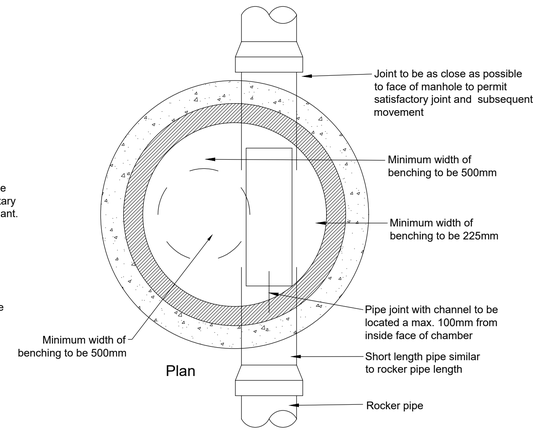
Rodding eye detail



Section

Typical Manhole Detail - Type B

Maximum depth from cover level to soffit of pipe 3.0m



Plan

NOMINAL DIAMETER (mm) DN	EFFECTIVE ROCKER PIPE LENGTH (m)
150 - 600	0.6
675 - 750	1.0
OVER 750	1.25

DIAMETER OF LARGEST PIPE IN MANHOLE (mm) DN	INTERNAL DIAMETER OF MANHOLE (mm)
< 375	1200 (1050 WHERE SOFFIT IS 1.35-1.5m)
375 - 450	1350
500 - 700	1500
750 - 900	1800
> 900	CONSULT UNDERTAKER

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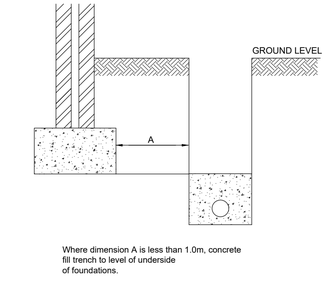
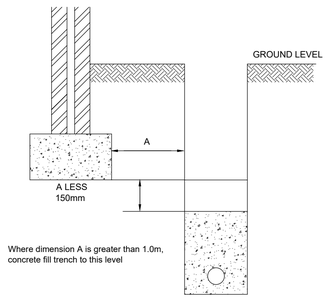


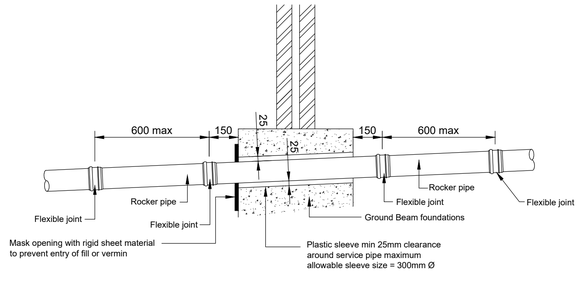
Where dimension A is less than 1.0m, concrete fill trench to level of underside of foundations.

Pipes near buildings

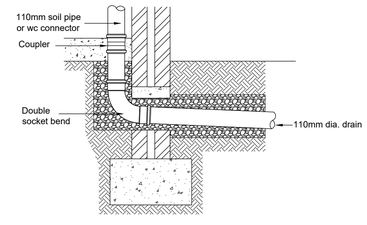


Where dimension A is greater than 1.0m, concrete fill trench to this level

Pipes near buildings



Pipes passing through foundations



Soil pipe / wc connection

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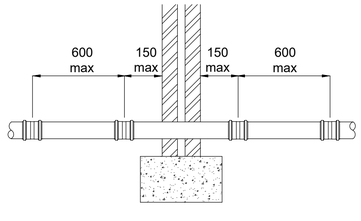
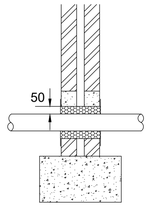


A. Short length of pipe bedded in wall with joints formed within 150mm of each wall face. Adjacent rocker pipes of 600mm max. length with flexible joints.

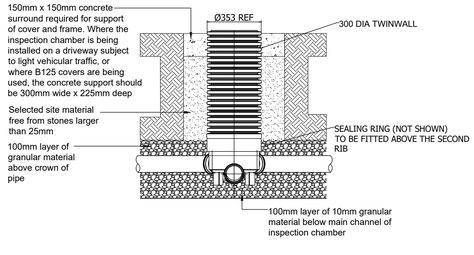
Pipes through wall detail

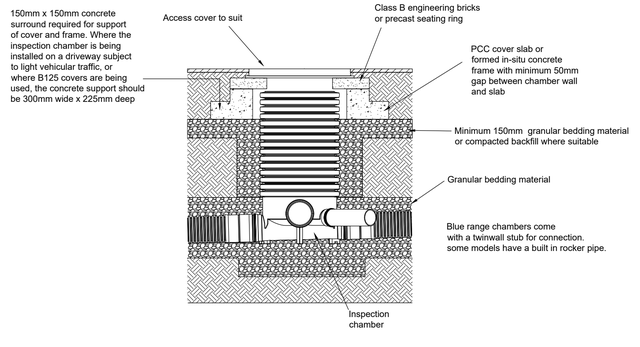


B. Arch or lintelled opening to give min 50mm space all round the pipe. Mask opeing on both sides of the wall with rigid sheet material to prevent entry of fill or vermin. Important Fill void with compressible material to prevent entry of gas.

Pipes through wall with lintel detail

300mmØ TURTLE ENVIRO INSPECTION CHAMBER DETAIL





450mmØ/600mmØ Turtle Enviro Inspection Chamber

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ARCHITECT: CITYZEN

JOB TITLE: 14-20 SOUTH STREET WORTHING

DRAWING TITLE: DRAINAGE CONSTRUCTION DETAILS

DRAWN	ENGINEER	CHECKED	APPROVED
SFC	SFC	CS	CS

DATE	SCALE @ A1
Apr' 24	1:250

JOB No.	STATUS	DRAWING No.	REV.
C2994	PL	301	1

8.3 Appendix C – Surface Water Calculations

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	30	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	2.000
CV	1.000	Preferred Cover Depth (m)	6.000
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	500.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
SW2	0.091	5.00	4.630	1200	25.000	-0.212	1.400
S21			4.520	600	13.054	-3.396	1.599
9452			4.300	1200	-4.717	-7.913	1.837
S3	0.114	5.00	4.650	600	35.311	40.985	0.600
9450			4.500	1200	-7.349	44.052	1.876

Links (Input)

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	SW2	S21	12.363	0.600	3.230	2.921	0.309	40.0	225	5.10	150.9
1.001	S21	9452	18.336	0.600	2.921	2.463	0.458	40.0	225	5.25	149.4
1.000_1	S3	9450	42.770	0.600	4.050	2.624	1.426	30.0	225	5.30	140.6

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Additional Storage (m³/ha)	0.0
Summer CV	0.950	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	0.950	Drain Down Time (mins)	240	Check Discharge Volume	x

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440	2160

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
30	35	0	0
100	0	0	0
100	45	0	0

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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
15 minute summer	SW2	10	3.301	0.071	16.2	0.0804	0.0000	OK
15 minute summer	S21	10	2.991	0.070	16.1	0.0198	0.0000	OK
15 minute summer	9452	10	2.530	0.067	16.0	0.0000	0.0000	OK
15 minute summer	S3	10	4.121	0.071	20.3	0.0202	0.0000	OK
15 minute summer	9450	10	2.694	0.070	20.1	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	SW2	1.000	S21	16.1	1.518	0.196	0.1313	
15 minute summer	S21	1.001	9452	16.0	1.571	0.194	0.1866	7.0
15 minute summer	S3	1.000_1	9450	20.1	1.890	0.211	0.4556	8.8

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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
15 minute summer	SW2	10	3.357	0.127	42.9	0.1436	0.0000	OK
15 minute summer	S21	10	3.044	0.123	42.7	0.0349	0.0000	OK
15 minute summer	9452	10	2.577	0.114	42.5	0.0000	0.0000	OK
15 minute summer	S3	10	4.175	0.125	53.8	0.0353	0.0000	OK
15 minute summer	9450	10	2.744	0.120	53.4	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	SW2	1.000	S21	42.7	1.884	0.518	0.2805	
15 minute summer	S21	1.001	9452	42.5	2.003	0.515	0.3888	18.6
15 minute summer	S3	1.000_1	9450	53.4	2.426	0.561	0.9423	23.2

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Results for 30 year +35% 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
15 minute summer	SW2	10	3.388	0.158	57.8	0.1782	0.0000	OK
15 minute summer	S21	10	3.073	0.152	57.7	0.0430	0.0000	OK
15 minute summer	9452	10	2.600	0.137	57.3	0.0000	0.0000	OK
15 minute summer	S3	10	4.203	0.153	72.5	0.0434	0.0000	OK
15 minute summer	9450	10	2.769	0.145	72.1	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	SW2	1.000	S21	57.7	1.982	0.699	0.3598	
15 minute summer	S21	1.001	9452	57.3	2.129	0.695	0.4932	25.1
15 minute summer	S3	1.000_1	9450	72.1	2.580	0.757	1.1950	31.4

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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
15 minute summer	SW2	10	3.379	0.149	53.8	0.1686	0.0000	OK
15 minute summer	S21	10	3.065	0.144	53.7	0.0408	0.0000	OK
15 minute summer	9452	10	2.594	0.131	53.3	0.0000	0.0000	OK
15 minute summer	S3	10	4.195	0.145	67.4	0.0412	0.0000	OK
15 minute summer	9450	10	2.762	0.138	67.1	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	SW2	1.000	S21	53.7	1.961	0.651	0.3385	
15 minute summer	S21	1.001	9452	53.3	2.101	0.647	0.4655	23.3
15 minute summer	S3	1.000_1	9450	67.1	2.546	0.703	1.1265	29.2

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Results for 100 year +45% 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
15 minute summer	SW2	11	3.471	0.241	78.2	0.2728	0.0000	SURCHARGED
15 minute summer	S21	11	3.116	0.195	75.3	0.0551	0.0000	OK
15 minute summer	9452	11	2.631	0.168	75.9	0.0000	0.0000	OK
15 minute summer	S3	10	4.249	0.199	97.9	0.0563	0.0000	OK
15 minute summer	9450	11	2.852	0.228	96.8	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	SW2	1.000	S21	75.3	2.021	0.913	0.4717	
15 minute summer	S21	1.001	9452	75.9	2.213	0.921	0.6272	33.7
15 minute summer	S3	1.000_1	9450	96.8	2.647	1.016	1.6452	42.3

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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	SW2	10	3.301	0.071	16.2	0.0804	0.0000	OK
15 minute summer	S21	10	2.991	0.070	16.1	0.0198	0.0000	OK
15 minute summer	9452	10	2.530	0.067	16.0	0.0000	0.0000	OK
15 minute summer	S3	10	4.121	0.071	20.3	0.0202	0.0000	OK
15 minute summer	9450	10	2.694	0.070	20.1	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	SW2	1.000	S21	16.1	1.518	0.196	0.1313	
15 minute summer	S21	1.001	9452	16.0	1.571	0.194	0.1866	7.0
15 minute summer	S3	1.000_1	9450	20.1	1.890	0.211	0.4556	8.8

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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	SW2	10	3.299	0.069	15.2	0.0777	0.0000	OK
15 minute winter	S21	10	2.988	0.067	15.1	0.0191	0.0000	OK
15 minute winter	9452	10	2.528	0.065	15.0	0.0000	0.0000	OK
15 minute winter	S3	10	4.119	0.069	19.0	0.0195	0.0000	OK
15 minute winter	9450	10	2.691	0.067	18.8	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	SW2	1.000	S21	15.1	1.494	0.183	0.1251	
15 minute winter	S21	1.001	9452	15.0	1.543	0.181	0.1778	7.0
15 minute winter	S3	1.000_1	9450	18.8	1.855	0.197	0.4337	8.8

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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	SW2	18	3.297	0.067	14.5	0.0757	0.0000	OK
30 minute summer	S21	18	2.987	0.066	14.5	0.0187	0.0000	OK
30 minute summer	9452	18	2.527	0.064	14.5	0.0000	0.0000	OK
30 minute summer	S3	18	4.118	0.068	18.2	0.0191	0.0000	OK
30 minute summer	9450	18	2.690	0.066	18.2	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	SW2	1.000	S21	14.5	1.479	0.176	0.1212	
30 minute summer	S21	1.001	9452	14.5	1.533	0.176	0.1735	9.2
30 minute summer	S3	1.000_1	9450	18.2	1.840	0.191	0.4230	11.5

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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	SW2	18	3.290	0.060	11.7	0.0675	0.0000	OK
30 minute winter	S21	18	2.980	0.059	11.7	0.0167	0.0000	OK
30 minute winter	9452	18	2.520	0.057	11.7	0.0000	0.0000	OK
30 minute winter	S3	18	4.110	0.060	14.7	0.0171	0.0000	OK
30 minute winter	9450	18	2.683	0.059	14.7	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	SW2	1.000	S21	11.7	1.401	0.142	0.1033	
30 minute winter	S21	1.001	9452	11.7	1.445	0.142	0.1484	9.2
30 minute winter	S3	1.000_1	9450	14.7	1.734	0.154	0.3625	11.5

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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	SW2	33	3.287	0.057	10.9	0.0650	0.0000	OK
60 minute summer	S21	33	2.978	0.057	10.9	0.0161	0.0000	OK
60 minute summer	9452	33	2.518	0.055	10.9	0.0000	0.0000	OK
60 minute summer	S3	33	4.108	0.058	13.6	0.0164	0.0000	OK
60 minute summer	9450	33	2.681	0.057	13.6	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	SW2	1.000	S21	10.9	1.375	0.132	0.0980	
60 minute summer	S21	1.001	9452	10.9	1.417	0.132	0.1410	11.5
60 minute summer	S3	1.000_1	9450	13.6	1.696	0.143	0.3429	14.5

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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	SW2	33	3.279	0.049	7.9	0.0549	0.0000	OK
60 minute winter	S21	33	2.969	0.048	7.9	0.0136	0.0000	OK
60 minute winter	9452	33	2.510	0.047	7.9	0.0000	0.0000	OK
60 minute winter	S3	33	4.099	0.049	9.9	0.0140	0.0000	OK
60 minute winter	9450	33	2.673	0.049	9.9	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	SW2	1.000	S21	7.9	1.264	0.096	0.0773	
60 minute winter	S21	1.001	9452	7.9	1.297	0.096	0.1117	11.6
60 minute winter	S3	1.000_1	9450	9.9	1.551	0.104	0.2730	14.5

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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	SW2	64	3.280	0.050	8.2	0.0560	0.0000	OK
120 minute summer	S21	64	2.970	0.049	8.2	0.0139	0.0000	OK
120 minute summer	9452	64	2.511	0.048	8.2	0.0000	0.0000	OK
120 minute summer	S3	64	4.100	0.050	10.2	0.0142	0.0000	OK
120 minute summer	9450	64	2.674	0.050	10.2	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	SW2	1.000	S21	8.2	1.277	0.099	0.0794	
120 minute summer	S21	1.001	9452	8.2	1.310	0.099	0.1148	16.2
120 minute summer	S3	1.000_1	9450	10.2	1.564	0.107	0.2789	20.4

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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	SW2	64	3.271	0.041	5.6	0.0461	0.0000	OK
120 minute winter	S21	64	2.962	0.041	5.6	0.0115	0.0000	OK
120 minute winter	9452	64	2.503	0.040	5.6	0.0000	0.0000	OK
120 minute winter	S3	64	4.092	0.042	7.0	0.0118	0.0000	OK
120 minute winter	9450	64	2.665	0.041	7.0	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	SW2	1.000	S21	5.6	1.151	0.068	0.0602	
120 minute winter	S21	1.001	9452	5.6	1.175	0.068	0.0874	16.2
120 minute winter	S3	1.000_1	9450	7.0	1.402	0.073	0.2136	20.3

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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	SW2	96	3.274	0.044	6.4	0.0493	0.0000	OK
180 minute summer	S21	96	2.964	0.043	6.4	0.0123	0.0000	OK
180 minute summer	9452	96	2.505	0.042	6.4	0.0000	0.0000	OK
180 minute summer	S3	96	4.094	0.044	8.0	0.0126	0.0000	OK
180 minute summer	9450	96	2.668	0.044	8.0	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	SW2	1.000	S21	6.4	1.194	0.078	0.0663	
180 minute summer	S21	1.001	9452	6.4	1.221	0.078	0.0961	19.1
180 minute summer	S3	1.000_1	9450	8.0	1.458	0.084	0.2346	24.0

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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	SW2	96	3.266	0.036	4.4	0.0408	0.0000	OK
180 minute winter	S21	96	2.957	0.036	4.4	0.0102	0.0000	OK
180 minute winter	9452	96	2.498	0.035	4.4	0.0000	0.0000	OK
180 minute winter	S3	96	4.087	0.037	5.5	0.0105	0.0000	OK
180 minute winter	9450	96	2.661	0.037	5.5	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	SW2	1.000	S21	4.4	1.077	0.053	0.0505	
180 minute winter	S21	1.001	9452	4.4	1.097	0.053	0.0736	19.1
180 minute winter	S3	1.000_1	9450	5.5	1.307	0.058	0.1800	23.9

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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	SW2	124	3.270	0.040	5.5	0.0457	0.0000	OK
240 minute summer	S21	124	2.961	0.040	5.5	0.0113	0.0000	OK
240 minute summer	9452	124	2.502	0.039	5.5	0.0000	0.0000	OK
240 minute summer	S3	124	4.091	0.041	6.9	0.0117	0.0000	OK
240 minute summer	9450	124	2.665	0.041	6.9	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	SW2	1.000	S21	5.5	1.145	0.067	0.0593	
240 minute summer	S21	1.001	9452	5.5	1.167	0.066	0.0860	21.1
240 minute summer	S3	1.000_1	9450	6.9	1.394	0.072	0.2110	26.3

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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	SW2	124	3.263	0.033	3.7	0.0375	0.0000	OK
240 minute winter	S21	124	2.954	0.033	3.7	0.0093	0.0000	OK
240 minute winter	9452	124	2.495	0.032	3.7	0.0000	0.0000	OK
240 minute winter	S3	124	4.084	0.034	4.6	0.0096	0.0000	OK
240 minute winter	9450	124	2.658	0.034	4.6	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	SW2	1.000	S21	3.7	1.026	0.045	0.0445	
240 minute winter	S21	1.001	9452	3.7	1.042	0.045	0.0649	21.1
240 minute winter	S3	1.000_1	9450	4.6	1.240	0.048	0.1584	26.4

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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	SW2	184	3.266	0.036	4.3	0.0404	0.0000	OK
360 minute summer	S21	184	2.956	0.035	4.3	0.0100	0.0000	OK
360 minute summer	9452	184	2.498	0.035	4.3	0.0000	0.0000	OK
360 minute summer	S3	184	4.086	0.036	5.3	0.0102	0.0000	OK
360 minute summer	9450	184	2.660	0.036	5.3	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	SW2	1.000	S21	4.3	1.070	0.052	0.0496	
360 minute summer	S21	1.001	9452	4.3	1.088	0.052	0.0720	23.6
360 minute summer	S3	1.000_1	9450	5.3	1.291	0.055	0.1749	29.3

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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	SW2	184	3.259	0.029	2.8	0.0327	0.0000	OK
360 minute winter	S21	184	2.950	0.029	2.8	0.0081	0.0000	OK
360 minute winter	9452	184	2.491	0.028	2.8	0.0000	0.0000	OK
360 minute winter	S3	184	4.080	0.030	3.5	0.0084	0.0000	OK
360 minute winter	9450	184	2.653	0.029	3.5	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	SW2	1.000	S21	2.8	0.948	0.034	0.0365	
360 minute winter	S21	1.001	9452	2.8	0.960	0.034	0.0534	23.7
360 minute winter	S3	1.000_1	9450	3.5	1.144	0.037	0.1308	29.9

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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	SW2	248	3.261	0.031	3.3	0.0354	0.0000	OK
480 minute summer	S21	248	2.952	0.031	3.3	0.0088	0.0000	OK
480 minute summer	9452	248	2.494	0.031	3.3	0.0000	0.0000	OK
480 minute summer	S3	248	4.082	0.032	4.2	0.0092	0.0000	OK
480 minute summer	9450	248	2.656	0.032	4.2	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	SW2	1.000	S21	3.3	0.993	0.040	0.0411	
480 minute summer	S21	1.001	9452	3.3	1.009	0.040	0.0600	25.3
480 minute summer	S3	1.000_1	9450	4.2	1.207	0.044	0.1488	31.9

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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	SW2	240	3.256	0.026	2.2	0.0291	0.0000	OK
480 minute winter	S21	240	2.947	0.026	2.2	0.0073	0.0000	OK
480 minute winter	9452	240	2.488	0.025	2.2	0.0000	0.0000	OK
480 minute winter	S3	248	4.077	0.027	2.8	0.0075	0.0000	OK
480 minute winter	9450	248	2.650	0.026	2.8	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	SW2	1.000	S21	2.2	0.883	0.027	0.0308	
480 minute winter	S21	1.001	9452	2.2	0.894	0.027	0.0451	25.7
480 minute winter	S3	1.000_1	9450	2.8	1.069	0.029	0.1121	31.8

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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	SW2	315	3.258	0.028	2.7	0.0321	0.0000	OK
600 minute summer	S21	315	2.949	0.028	2.7	0.0080	0.0000	OK
600 minute summer	9452	315	2.491	0.028	2.7	0.0000	0.0000	OK
600 minute summer	S3	315	4.079	0.029	3.4	0.0083	0.0000	OK
600 minute summer	9450	315	2.653	0.029	3.4	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	SW2	1.000	S21	2.7	0.938	0.033	0.0356	
600 minute summer	S21	1.001	9452	2.7	0.950	0.033	0.0521	26.7
600 minute summer	S3	1.000_1	9450	3.4	1.134	0.036	0.1283	33.4

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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	SW2	315	3.254	0.024	1.9	0.0271	0.0000	OK
600 minute winter	S21	315	2.945	0.024	1.9	0.0068	0.0000	OK
600 minute winter	9452	315	2.487	0.024	1.9	0.0000	0.0000	OK
600 minute winter	S3	315	4.074	0.024	2.3	0.0069	0.0000	OK
600 minute winter	9450	315	2.648	0.024	2.3	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	SW2	1.000	S21	1.9	0.847	0.023	0.0277	
600 minute winter	S21	1.001	9452	1.9	0.856	0.023	0.0407	26.8
600 minute winter	S3	1.000_1	9450	2.3	1.008	0.024	0.0976	33.3

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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	SW2	375	3.257	0.027	2.4	0.0303	0.0000	OK
720 minute summer	S21	375	2.948	0.027	2.4	0.0076	0.0000	OK
720 minute summer	9452	375	2.489	0.026	2.4	0.0000	0.0000	OK
720 minute summer	S3	375	4.078	0.028	3.0	0.0078	0.0000	OK
720 minute summer	9450	375	2.651	0.027	3.0	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	SW2	1.000	S21	2.4	0.906	0.029	0.0328	
720 minute summer	S21	1.001	9452	2.4	0.917	0.029	0.0480	27.8
720 minute summer	S3	1.000_1	9450	3.0	1.091	0.031	0.1176	34.7

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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	SW2	360	3.252	0.022	1.6	0.0249	0.0000	OK
720 minute winter	S21	360	2.943	0.022	1.6	0.0062	0.0000	OK
720 minute winter	9452	360	2.485	0.022	1.6	0.0000	0.0000	OK
720 minute winter	S3	360	4.073	0.023	2.0	0.0064	0.0000	OK
720 minute winter	9450	360	2.647	0.023	2.0	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	SW2	1.000	S21	1.6	0.805	0.019	0.0246	
720 minute winter	S21	1.001	9452	1.6	0.813	0.019	0.0361	28.0
720 minute winter	S3	1.000_1	9450	2.0	0.966	0.021	0.0885	35.2

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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	SW2	495	3.255	0.025	2.0	0.0278	0.0000	OK
960 minute summer	S21	495	2.946	0.025	2.0	0.0069	0.0000	OK
960 minute summer	9452	495	2.487	0.024	2.0	0.0000	0.0000	OK
960 minute summer	S3	495	4.075	0.025	2.5	0.0072	0.0000	OK
960 minute summer	9450	495	2.649	0.025	2.5	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	SW2	1.000	S21	2.0	0.860	0.024	0.0288	
960 minute summer	S21	1.001	9452	2.0	0.869	0.024	0.0422	29.9
960 minute summer	S3	1.000_1	9450	2.5	1.033	0.026	0.1035	36.9

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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	SW2	480	3.250	0.020	1.3	0.0226	0.0000	OK
960 minute winter	S21	480	2.941	0.020	1.3	0.0056	0.0000	OK
960 minute winter	9452	480	2.483	0.020	1.3	0.0000	0.0000	OK
960 minute winter	S3	480	4.070	0.020	1.6	0.0058	0.0000	OK
960 minute winter	9450	480	2.644	0.020	1.6	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	SW2	1.000	S21	1.3	0.760	0.016	0.0212	
960 minute winter	S21	1.001	9452	1.3	0.766	0.016	0.0311	29.5
960 minute winter	S3	1.000_1	9450	1.6	0.905	0.017	0.0756	37.4

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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	SW2	750	3.251	0.021	1.4	0.0234	0.0000	OK
1440 minute summer	S21	750	2.942	0.021	1.4	0.0058	0.0000	OK
1440 minute summer	9452	750	2.483	0.020	1.4	0.0000	0.0000	OK
1440 minute summer	S3	750	4.072	0.022	1.8	0.0061	0.0000	OK
1440 minute summer	9450	750	2.645	0.021	1.8	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	SW2	1.000	S21	1.4	0.775	0.017	0.0223	
1440 minute summer	S21	1.001	9452	1.4	0.783	0.017	0.0328	31.9
1440 minute summer	S3	1.000_1	9450	1.8	0.937	0.019	0.0822	41.1

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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	SW2	690	3.247	0.017	0.9	0.0190	0.0000	OK
1440 minute winter	S21	690	2.938	0.017	0.9	0.0047	0.0000	OK
1440 minute winter	9452	690	2.480	0.017	0.9	0.0000	0.0000	OK
1440 minute winter	S3	750	4.068	0.018	1.2	0.0050	0.0000	OK
1440 minute winter	9450	750	2.642	0.018	1.2	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	SW2	1.000	S21	0.9	0.678	0.011	0.0164	
1440 minute winter	S21	1.001	9452	0.9	0.683	0.011	0.0242	33.5
1440 minute winter	S3	1.000_1	9450	1.2	0.827	0.013	0.0620	40.3

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Results for 2 year 2160 minute summer. 2400 minute analysis at 60 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
2160 minute summer	SW2	1140	3.248	0.018	1.0	0.0199	0.0000	OK
2160 minute summer	S21	1140	2.939	0.018	1.0	0.0050	0.0000	OK
2160 minute summer	9452	1140	2.480	0.017	1.0	0.0000	0.0000	OK
2160 minute summer	S3	1140	4.069	0.019	1.3	0.0052	0.0000	OK
2160 minute summer	9450	1140	2.642	0.018	1.3	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)
2160 minute summer	SW2	1.000	S21	1.0	0.700	0.012	0.0177	
2160 minute summer	S21	1.001	9452	1.0	0.705	0.012	0.0260	35.7
2160 minute summer	S3	1.000_1	9450	1.3	0.849	0.014	0.0655	45.0

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Results for 2 year 2160 minute winter. 2400 minute analysis at 60 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
2160 minute winter	SW2	1140	3.245	0.015	0.7	0.0170	0.0000	OK
2160 minute winter	S21	1140	2.936	0.015	0.7	0.0042	0.0000	OK
2160 minute winter	9452	1140	2.478	0.015	0.7	0.0000	0.0000	OK
2160 minute winter	S3	1140	4.066	0.016	0.9	0.0044	0.0000	OK
2160 minute winter	9450	1140	2.640	0.016	0.9	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)
2160 minute winter	SW2	1.000	S21	0.7	0.629	0.008	0.0138	
2160 minute winter	S21	1.001	9452	0.7	0.633	0.008	0.0203	34.6
2160 minute winter	S3	1.000_1	9450	0.9	0.757	0.009	0.0509	45.4

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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	SW2	10	3.357	0.127	42.9	0.1436	0.0000	OK
15 minute summer	S21	10	3.044	0.123	42.7	0.0349	0.0000	OK
15 minute summer	9452	10	2.577	0.114	42.5	0.0000	0.0000	OK
15 minute summer	S3	10	4.175	0.125	53.8	0.0353	0.0000	OK
15 minute summer	9450	10	2.744	0.120	53.4	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	SW2	1.000	S21	42.7	1.884	0.518	0.2805	
15 minute summer	S21	1.001	9452	42.5	2.003	0.515	0.3888	18.6
15 minute summer	S3	1.000_1	9450	53.4	2.426	0.561	0.9423	23.2

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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	SW2	10	3.352	0.122	40.3	0.1378	0.0000	OK
15 minute winter	S21	10	3.039	0.118	40.1	0.0335	0.0000	OK
15 minute winter	9452	10	2.572	0.109	39.8	0.0000	0.0000	OK
15 minute winter	S3	10	4.170	0.120	50.4	0.0339	0.0000	OK
15 minute winter	9450	10	2.739	0.115	50.1	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	SW2	1.000	S21	40.1	1.861	0.486	0.2665	
15 minute winter	S21	1.001	9452	39.8	1.973	0.482	0.3697	18.6
15 minute winter	S3	1.000_1	9450	50.1	2.389	0.525	0.8965	23.3

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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	SW2	17	3.349	0.119	39.1	0.1351	0.0000	OK
30 minute summer	S21	18	3.038	0.117	39.1	0.0331	0.0000	OK
30 minute summer	9452	18	2.571	0.108	39.1	0.0000	0.0000	OK
30 minute summer	S3	18	4.168	0.118	49.0	0.0334	0.0000	OK
30 minute summer	9450	18	2.738	0.114	49.0	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	SW2	1.000	S21	39.1	1.853	0.474	0.2609	
30 minute summer	S21	1.001	9452	39.1	1.969	0.474	0.3642	24.7
30 minute summer	S3	1.000_1	9450	49.0	2.381	0.514	0.8801	30.9

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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	SW2	17	3.335	0.105	31.6	0.1182	0.0000	OK
30 minute winter	S21	18	3.024	0.103	31.6	0.0290	0.0000	OK
30 minute winter	9452	18	2.559	0.096	31.6	0.0000	0.0000	OK
30 minute winter	S3	18	4.154	0.104	39.6	0.0294	0.0000	OK
30 minute winter	9450	18	2.725	0.101	39.6	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	SW2	1.000	S21	31.6	1.774	0.383	0.2203	
30 minute winter	S21	1.001	9452	31.6	1.873	0.383	0.3095	24.7
30 minute winter	S3	1.000_1	9450	39.6	2.261	0.415	0.7490	30.9

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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	SW2	32	3.331	0.101	29.7	0.1138	0.0000	OK
60 minute summer	S21	33	3.020	0.099	29.7	0.0280	0.0000	OK
60 minute summer	9452	33	2.556	0.093	29.7	0.0000	0.0000	OK
60 minute summer	S3	33	4.150	0.100	37.1	0.0283	0.0000	OK
60 minute summer	9450	33	2.721	0.097	37.1	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	SW2	1.000	S21	29.7	1.750	0.360	0.2098	
60 minute summer	S21	1.001	9452	29.7	1.844	0.360	0.2953	31.4
60 minute summer	S3	1.000_1	9450	37.1	2.225	0.389	0.7133	39.3

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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	SW2	33	3.313	0.083	21.4	0.0940	0.0000	OK
60 minute winter	S21	33	3.003	0.082	21.4	0.0232	0.0000	OK
60 minute winter	9452	33	2.541	0.078	21.4	0.0000	0.0000	OK
60 minute winter	S3	33	4.133	0.083	26.8	0.0235	0.0000	OK
60 minute winter	9450	33	2.705	0.081	26.8	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	SW2	1.000	S21	21.4	1.625	0.260	0.1628	
60 minute winter	S21	1.001	9452	21.4	1.698	0.260	0.2311	31.4
60 minute winter	S3	1.000_1	9450	26.8	2.044	0.281	0.5607	39.4

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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	SW2	64	3.309	0.079	19.5	0.0892	0.0000	OK
120 minute summer	S21	64	2.999	0.078	19.5	0.0220	0.0000	OK
120 minute summer	9452	64	2.537	0.074	19.5	0.0000	0.0000	OK
120 minute summer	S3	64	4.129	0.079	24.4	0.0224	0.0000	OK
120 minute summer	9450	64	2.701	0.077	24.4	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	SW2	1.000	S21	19.5	1.589	0.236	0.1517	
120 minute summer	S21	1.001	9452	19.5	1.657	0.237	0.2158	38.7
120 minute summer	S3	1.000_1	9450	24.4	1.993	0.256	0.5235	48.5

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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	SW2	64	3.294	0.064	13.4	0.0726	0.0000	OK
120 minute winter	S21	64	2.984	0.063	13.4	0.0180	0.0000	OK
120 minute winter	9452	64	2.524	0.061	13.4	0.0000	0.0000	OK
120 minute winter	S3	64	4.115	0.065	16.8	0.0184	0.0000	OK
120 minute winter	9450	64	2.688	0.064	16.8	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	SW2	1.000	S21	13.4	1.450	0.162	0.1143	
120 minute winter	S21	1.001	9452	13.4	1.500	0.163	0.1638	38.7
120 minute winter	S3	1.000_1	9450	16.8	1.801	0.176	0.3991	48.5

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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	SW2	96	3.297	0.067	14.4	0.0754	0.0000	OK
180 minute summer	S21	96	2.987	0.066	14.4	0.0187	0.0000	OK
180 minute summer	9452	96	2.526	0.063	14.4	0.0000	0.0000	OK
180 minute summer	S3	96	4.117	0.067	18.1	0.0191	0.0000	OK
180 minute summer	9450	96	2.690	0.066	18.1	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	SW2	1.000	S21	14.4	1.476	0.175	0.1206	
180 minute summer	S21	1.001	9452	14.4	1.530	0.175	0.1727	42.9
180 minute summer	S3	1.000_1	9450	18.1	1.838	0.190	0.4213	53.8

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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	SW2	96	3.285	0.055	9.9	0.0618	0.0000	OK
180 minute winter	S21	96	2.975	0.054	9.9	0.0153	0.0000	OK
180 minute winter	9452	96	2.515	0.052	9.9	0.0000	0.0000	OK
180 minute winter	S3	96	4.105	0.055	12.4	0.0157	0.0000	OK
180 minute winter	9450	96	2.679	0.055	12.4	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	SW2	1.000	S21	9.9	1.341	0.120	0.0913	
180 minute winter	S21	1.001	9452	9.9	1.380	0.120	0.1315	42.9
180 minute winter	S3	1.000_1	9450	12.4	1.653	0.130	0.3209	53.8

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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	SW2	124	3.291	0.061	12.1	0.0687	0.0000	OK
240 minute summer	S21	124	2.981	0.060	12.1	0.0170	0.0000	OK
240 minute summer	9452	124	2.521	0.058	12.0	0.0000	0.0000	OK
240 minute summer	S3	124	4.111	0.061	15.1	0.0173	0.0000	OK
240 minute summer	9450	124	2.684	0.060	15.1	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	SW2	1.000	S21	12.1	1.412	0.146	0.1058	
240 minute summer	S21	1.001	9452	12.0	1.457	0.146	0.1517	46.0
240 minute summer	S3	1.000_1	9450	15.1	1.745	0.158	0.3690	57.4

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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	SW2	124	3.279	0.049	8.0	0.0553	0.0000	OK
240 minute winter	S21	124	2.969	0.048	8.0	0.0137	0.0000	OK
240 minute winter	9452	124	2.510	0.047	8.0	0.0000	0.0000	OK
240 minute winter	S3	124	4.100	0.050	10.1	0.0141	0.0000	OK
240 minute winter	9450	124	2.673	0.049	10.1	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	SW2	1.000	S21	8.0	1.268	0.097	0.0780	
240 minute winter	S21	1.001	9452	8.0	1.301	0.097	0.1127	46.0
240 minute winter	S3	1.000_1	9450	10.1	1.560	0.106	0.2768	57.6

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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	SW2	184	3.282	0.052	9.0	0.0588	0.0000	OK
360 minute summer	S21	184	2.972	0.051	9.0	0.0146	0.0000	OK
360 minute summer	9452	184	2.513	0.050	9.0	0.0000	0.0000	OK
360 minute summer	S3	184	4.103	0.053	11.3	0.0149	0.0000	OK
360 minute summer	9450	184	2.676	0.052	11.3	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	SW2	1.000	S21	9.0	1.308	0.109	0.0849	
360 minute summer	S21	1.001	9452	9.0	1.342	0.109	0.1223	49.9
360 minute summer	S3	1.000_1	9450	11.3	1.608	0.118	0.2996	62.3

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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	SW2	184	3.271	0.041	5.8	0.0469	0.0000	OK
360 minute winter	S21	184	2.962	0.041	5.8	0.0117	0.0000	OK
360 minute winter	9452	184	2.503	0.040	5.8	0.0000	0.0000	OK
360 minute winter	S3	184	4.092	0.042	7.3	0.0120	0.0000	OK
360 minute winter	9450	184	2.666	0.042	7.3	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	SW2	1.000	S21	5.8	1.162	0.070	0.0617	
360 minute winter	S21	1.001	9452	5.8	1.186	0.070	0.0896	50.0
360 minute winter	S3	1.000_1	9450	7.3	1.419	0.077	0.2199	62.5

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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	SW2	248	3.275	0.045	6.9	0.0512	0.0000	OK
480 minute summer	S21	248	2.966	0.045	6.9	0.0127	0.0000	OK
480 minute summer	9452	248	2.507	0.044	6.9	0.0000	0.0000	OK
480 minute summer	S3	248	4.096	0.046	8.7	0.0131	0.0000	OK
480 minute summer	9450	248	2.670	0.046	8.7	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	SW2	1.000	S21	6.9	1.219	0.084	0.0700	
480 minute summer	S21	1.001	9452	6.9	1.248	0.084	0.1014	52.4
480 minute summer	S3	1.000_1	9450	8.7	1.494	0.091	0.2491	65.7

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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	SW2	248	3.267	0.037	4.6	0.0418	0.0000	OK
480 minute winter	S21	248	2.958	0.037	4.6	0.0104	0.0000	OK
480 minute winter	9452	248	2.499	0.036	4.6	0.0000	0.0000	OK
480 minute winter	S3	248	4.088	0.038	5.8	0.0107	0.0000	OK
480 minute winter	9450	248	2.662	0.038	5.8	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	SW2	1.000	S21	4.6	1.090	0.056	0.0522	
480 minute winter	S21	1.001	9452	4.6	1.111	0.056	0.0759	52.6
480 minute winter	S3	1.000_1	9450	5.8	1.327	0.061	0.1870	65.9

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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	SW2	315	3.271	0.041	5.6	0.0461	0.0000	OK
600 minute summer	S21	315	2.962	0.041	5.6	0.0115	0.0000	OK
600 minute summer	9452	315	2.503	0.040	5.6	0.0000	0.0000	OK
600 minute summer	S3	315	4.092	0.042	7.0	0.0118	0.0000	OK
600 minute summer	9450	315	2.665	0.041	7.0	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	SW2	1.000	S21	5.6	1.151	0.068	0.0602	
600 minute summer	S21	1.001	9452	5.6	1.175	0.068	0.0874	54.2
600 minute summer	S3	1.000_1	9450	7.0	1.402	0.073	0.2136	68.1

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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	SW2	315	3.264	0.034	3.8	0.0380	0.0000	OK
600 minute winter	S21	315	2.954	0.033	3.8	0.0095	0.0000	OK
600 minute winter	9452	315	2.496	0.033	3.8	0.0000	0.0000	OK
600 minute winter	S3	315	4.085	0.035	4.8	0.0098	0.0000	OK
600 minute winter	9450	315	2.658	0.034	4.8	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	SW2	1.000	S21	3.8	1.034	0.046	0.0454	
600 minute winter	S21	1.001	9452	3.8	1.051	0.046	0.0663	54.9
600 minute winter	S3	1.000_1	9450	4.8	1.257	0.050	0.1634	68.1

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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	SW2	375	3.268	0.038	4.9	0.0431	0.0000	OK
720 minute summer	S21	375	2.959	0.038	4.9	0.0107	0.0000	OK
720 minute summer	9452	375	2.500	0.037	4.9	0.0000	0.0000	OK
720 minute summer	S3	375	4.089	0.039	6.1	0.0110	0.0000	OK
720 minute summer	9450	375	2.662	0.038	6.1	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	SW2	1.000	S21	4.9	1.109	0.059	0.0546	
720 minute summer	S21	1.001	9452	4.9	1.131	0.059	0.0795	56.2
720 minute summer	S3	1.000_1	9450	6.1	1.347	0.064	0.1938	70.2

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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	SW2	375	3.261	0.031	3.3	0.0354	0.0000	OK
720 minute winter	S21	375	2.952	0.031	3.3	0.0088	0.0000	OK
720 minute winter	9452	375	2.494	0.031	3.3	0.0000	0.0000	OK
720 minute winter	S3	375	4.082	0.032	4.1	0.0091	0.0000	OK
720 minute winter	9450	375	2.656	0.032	4.1	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	SW2	1.000	S21	3.3	0.993	0.040	0.0411	
720 minute winter	S21	1.001	9452	3.3	1.009	0.040	0.0600	56.5
720 minute winter	S3	1.000_1	9450	4.1	1.199	0.043	0.1463	70.3

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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	SW2	495	3.264	0.034	3.9	0.0385	0.0000	OK
960 minute summer	S21	495	2.955	0.034	3.9	0.0096	0.0000	OK
960 minute summer	9452	495	2.496	0.033	3.9	0.0000	0.0000	OK
960 minute summer	S3	495	4.085	0.035	4.9	0.0099	0.0000	OK
960 minute summer	9450	495	2.659	0.035	4.9	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	SW2	1.000	S21	3.9	1.042	0.047	0.0463	
960 minute summer	S21	1.001	9452	3.9	1.059	0.047	0.0675	59.0
960 minute summer	S3	1.000_1	9450	4.9	1.265	0.051	0.1658	73.7

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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	SW2	495	3.258	0.028	2.6	0.0315	0.0000	OK
960 minute winter	S21	495	2.949	0.028	2.6	0.0079	0.0000	OK
960 minute winter	9452	495	2.490	0.027	2.6	0.0000	0.0000	OK
960 minute winter	S3	495	4.078	0.028	3.2	0.0080	0.0000	OK
960 minute winter	9450	495	2.652	0.028	3.2	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	SW2	1.000	S21	2.6	0.927	0.032	0.0347	
960 minute winter	S21	1.001	9452	2.6	0.939	0.032	0.0508	59.7
960 minute winter	S3	1.000_1	9450	3.2	1.113	0.034	0.1230	74.1

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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	SW2	750	3.258	0.028	2.7	0.0321	0.0000	OK
1440 minute summer	S21	750	2.949	0.028	2.7	0.0080	0.0000	OK
1440 minute summer	9452	750	2.491	0.028	2.7	0.0000	0.0000	OK
1440 minute summer	S3	750	4.079	0.029	3.4	0.0083	0.0000	OK
1440 minute summer	9450	750	2.653	0.029	3.4	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	SW2	1.000	S21	2.7	0.938	0.033	0.0356	
1440 minute summer	S21	1.001	9452	2.7	0.950	0.033	0.0521	63.4
1440 minute summer	S3	1.000_1	9450	3.4	1.134	0.036	0.1283	77.6

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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	SW2	720	3.253	0.023	1.8	0.0264	0.0000	OK
1440 minute winter	S21	720	2.944	0.023	1.8	0.0066	0.0000	OK
1440 minute winter	9452	720	2.486	0.023	1.8	0.0000	0.0000	OK
1440 minute winter	S3	750	4.074	0.024	2.3	0.0069	0.0000	OK
1440 minute winter	9450	750	2.648	0.024	2.3	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	SW2	1.000	S21	1.8	0.833	0.022	0.0267	
1440 minute winter	S21	1.001	9452	1.8	0.842	0.022	0.0392	62.5
1440 minute winter	S3	1.000_1	9450	2.3	1.008	0.024	0.0976	78.0

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Results for 30 year 2160 minute summer. 2400 minute analysis at 60 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
2160 minute summer	SW2	1140	3.254	0.024	1.9	0.0271	0.0000	OK
2160 minute summer	S21	1140	2.945	0.024	1.9	0.0068	0.0000	OK
2160 minute summer	9452	1140	2.487	0.024	1.9	0.0000	0.0000	OK
2160 minute summer	S3	1140	4.075	0.025	2.4	0.0070	0.0000	OK
2160 minute summer	9450	1140	2.649	0.025	2.4	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)
2160 minute summer	SW2	1.000	S21	1.9	0.847	0.023	0.0277	
2160 minute summer	S21	1.001	9452	1.9	0.856	0.023	0.0407	67.0
2160 minute summer	S3	1.000_1	9450	2.4	1.021	0.025	0.1005	83.6

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Results for 30 year 2160 minute winter. 2400 minute analysis at 60 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
2160 minute winter	SW2	1140	3.250	0.020	1.3	0.0226	0.0000	OK
2160 minute winter	S21	1140	2.941	0.020	1.3	0.0056	0.0000	OK
2160 minute winter	9452	1140	2.483	0.020	1.3	0.0000	0.0000	OK
2160 minute winter	S3	1140	4.070	0.020	1.6	0.0058	0.0000	OK
2160 minute winter	9450	1140	2.644	0.020	1.6	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)
2160 minute winter	SW2	1.000	S21	1.3	0.760	0.016	0.0212	
2160 minute winter	S21	1.001	9452	1.3	0.766	0.016	0.0311	67.4
2160 minute winter	S3	1.000_1	9450	1.6	0.905	0.017	0.0756	85.3

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Results for 30 year +35% 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	SW2	10	3.388	0.158	57.8	0.1782	0.0000	OK
15 minute summer	S21	10	3.073	0.152	57.7	0.0430	0.0000	OK
15 minute summer	9452	10	2.600	0.137	57.3	0.0000	0.0000	OK
15 minute summer	S3	10	4.203	0.153	72.5	0.0434	0.0000	OK
15 minute summer	9450	10	2.769	0.145	72.1	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	SW2	1.000	S21	57.7	1.982	0.699	0.3598	
15 minute summer	S21	1.001	9452	57.3	2.129	0.695	0.4932	25.1
15 minute summer	S3	1.000_1	9450	72.1	2.580	0.757	1.1950	31.4

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Results for 30 year +35% 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	SW2	10	3.380	0.150	54.3	0.1698	0.0000	OK
15 minute winter	S21	10	3.066	0.145	54.1	0.0410	0.0000	OK
15 minute winter	9452	10	2.594	0.131	53.7	0.0000	0.0000	OK
15 minute winter	S3	10	4.196	0.146	68.0	0.0414	0.0000	OK
15 minute winter	9450	10	2.763	0.139	67.5	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	SW2	1.000	S21	54.1	1.963	0.656	0.3409	
15 minute winter	S21	1.001	9452	53.7	2.102	0.651	0.4681	25.1
15 minute winter	S3	1.000_1	9450	67.5	2.548	0.708	1.1334	31.4

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Results for 30 year +35% 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	SW2	18	3.377	0.147	52.8	0.1661	0.0000	OK
30 minute summer	S21	18	3.064	0.143	52.8	0.0404	0.0000	OK
30 minute summer	9452	18	2.593	0.130	52.8	0.0000	0.0000	OK
30 minute summer	S3	18	4.194	0.144	66.1	0.0406	0.0000	OK
30 minute summer	9450	18	2.761	0.137	66.1	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	SW2	1.000	S21	52.8	1.957	0.640	0.3336	
30 minute summer	S21	1.001	9452	52.8	2.100	0.640	0.4609	33.3
30 minute summer	S3	1.000_1	9450	66.1	2.542	0.693	1.1119	41.7

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Results for 30 year +35% 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	SW2	17	3.356	0.126	42.6	0.1429	0.0000	OK
30 minute winter	S21	18	3.044	0.123	42.6	0.0349	0.0000	OK
30 minute winter	9452	18	2.577	0.114	42.6	0.0000	0.0000	OK
30 minute winter	S3	18	4.174	0.124	53.4	0.0352	0.0000	OK
30 minute winter	9450	18	2.744	0.120	53.4	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	SW2	1.000	S21	42.6	1.884	0.517	0.2796	
30 minute winter	S21	1.001	9452	42.6	2.007	0.517	0.3891	33.3
30 minute winter	S3	1.000_1	9450	53.4	2.429	0.560	0.9403	41.7

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Results for 30 year +35% 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	SW2	32	3.351	0.121	40.0	0.1371	0.0000	OK
60 minute summer	S21	33	3.040	0.119	40.0	0.0335	0.0000	OK
60 minute summer	9452	33	2.573	0.110	40.0	0.0000	0.0000	OK
60 minute summer	S3	33	4.170	0.120	50.1	0.0338	0.0000	OK
60 minute summer	9450	33	2.739	0.115	50.1	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	SW2	1.000	S21	40.0	1.861	0.485	0.2657	
60 minute summer	S21	1.001	9452	40.0	1.979	0.485	0.3706	42.4
60 minute summer	S3	1.000_1	9450	50.1	2.394	0.526	0.8952	53.1

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Results for 30 year +35% 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	SW2	33	3.329	0.099	28.9	0.1120	0.0000	OK
60 minute winter	S21	33	3.018	0.097	28.9	0.0275	0.0000	OK
60 minute winter	9452	33	2.554	0.091	28.9	0.0000	0.0000	OK
60 minute winter	S3	33	4.148	0.098	36.2	0.0279	0.0000	OK
60 minute winter	9450	33	2.720	0.096	36.2	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	SW2	1.000	S21	28.9	1.739	0.350	0.2054	
60 minute winter	S21	1.001	9452	28.9	1.832	0.351	0.2893	42.4
60 minute winter	S3	1.000_1	9450	36.2	2.211	0.380	0.7004	53.1

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Results for 30 year +35% 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	SW2	62	3.324	0.094	26.3	0.1059	0.0000	OK
120 minute summer	S21	64	3.013	0.092	26.3	0.0261	0.0000	OK
120 minute summer	9452	64	2.550	0.087	26.3	0.0000	0.0000	OK
120 minute summer	S3	64	4.143	0.093	32.9	0.0264	0.0000	OK
120 minute summer	9450	64	2.715	0.091	32.9	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	SW2	1.000	S21	26.3	1.703	0.319	0.1909	
120 minute summer	S21	1.001	9452	26.3	1.790	0.319	0.2695	52.3
120 minute summer	S3	1.000_1	9450	32.9	2.157	0.345	0.6524	65.5

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Results for 30 year +35% 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	SW2	64	3.306	0.076	18.1	0.0855	0.0000	OK
120 minute winter	S21	64	2.996	0.075	18.1	0.0211	0.0000	OK
120 minute winter	9452	64	2.534	0.071	18.1	0.0000	0.0000	OK
120 minute winter	S3	64	4.126	0.076	22.7	0.0215	0.0000	OK
120 minute winter	9450	64	2.698	0.074	22.7	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	SW2	1.000	S21	18.1	1.561	0.219	0.1434	
120 minute winter	S21	1.001	9452	18.1	1.625	0.220	0.2042	52.3
120 minute winter	S3	1.000_1	9450	22.7	1.954	0.238	0.4968	65.5

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Results for 30 year +35% 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	SW2	96	3.309	0.079	19.5	0.0892	0.0000	OK
180 minute summer	S21	96	2.999	0.078	19.5	0.0220	0.0000	OK
180 minute summer	9452	96	2.537	0.074	19.5	0.0000	0.0000	OK
180 minute summer	S3	96	4.129	0.079	24.4	0.0224	0.0000	OK
180 minute summer	9450	96	2.701	0.077	24.4	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	SW2	1.000	S21	19.5	1.589	0.236	0.1517	
180 minute summer	S21	1.001	9452	19.5	1.657	0.237	0.2158	57.9
180 minute summer	S3	1.000_1	9450	24.4	1.993	0.256	0.5236	72.5

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Results for 30 year +35% 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	SW2	96	3.294	0.064	13.4	0.0726	0.0000	OK
180 minute winter	S21	96	2.984	0.063	13.4	0.0180	0.0000	OK
180 minute winter	9452	96	2.524	0.061	13.4	0.0000	0.0000	OK
180 minute winter	S3	96	4.115	0.065	16.8	0.0184	0.0000	OK
180 minute winter	9450	96	2.688	0.064	16.8	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	SW2	1.000	S21	13.4	1.450	0.162	0.1143	
180 minute winter	S21	1.001	9452	13.4	1.500	0.163	0.1638	58.1
180 minute winter	S3	1.000_1	9450	16.8	1.801	0.176	0.3991	72.8

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Results for 30 year +35% 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	SW2	124	3.301	0.071	16.3	0.0807	0.0000	OK
240 minute summer	S21	124	2.991	0.070	16.3	0.0199	0.0000	OK
240 minute summer	9452	124	2.530	0.067	16.2	0.0000	0.0000	OK
240 minute summer	S3	124	4.122	0.072	20.4	0.0203	0.0000	OK
240 minute summer	9450	124	2.694	0.070	20.3	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	SW2	1.000	S21	16.3	1.521	0.197	0.1323	
240 minute summer	S21	1.001	9452	16.2	1.579	0.197	0.1885	62.0
240 minute summer	S3	1.000_1	9450	20.3	1.897	0.213	0.4589	77.8

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Results for 30 year +35% 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	SW2	124	3.287	0.057	10.8	0.0647	0.0000	OK
240 minute winter	S21	124	2.978	0.057	10.8	0.0160	0.0000	OK
240 minute winter	9452	124	2.518	0.055	10.8	0.0000	0.0000	OK
240 minute winter	S3	124	4.108	0.058	13.6	0.0164	0.0000	OK
240 minute winter	9450	124	2.681	0.057	13.6	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	SW2	1.000	S21	10.8	1.372	0.131	0.0973	
240 minute winter	S21	1.001	9452	10.8	1.413	0.131	0.1400	62.1
240 minute winter	S3	1.000_1	9450	13.6	1.696	0.143	0.3428	77.8

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Results for 30 year +35% 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	SW2	184	3.291	0.061	12.1	0.0687	0.0000	OK
360 minute summer	S21	184	2.981	0.060	12.1	0.0170	0.0000	OK
360 minute summer	9452	184	2.521	0.058	12.0	0.0000	0.0000	OK
360 minute summer	S3	184	4.111	0.061	15.2	0.0174	0.0000	OK
360 minute summer	9450	184	2.684	0.060	15.2	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	SW2	1.000	S21	12.1	1.412	0.146	0.1058	
360 minute summer	S21	1.001	9452	12.0	1.457	0.146	0.1517	67.1
360 minute summer	S3	1.000_1	9450	15.2	1.748	0.159	0.3707	83.8

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Results for 30 year +35% 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	SW2	184	3.279	0.049	7.9	0.0549	0.0000	OK
360 minute winter	S21	184	2.969	0.048	7.9	0.0136	0.0000	OK
360 minute winter	9452	184	2.510	0.047	7.9	0.0000	0.0000	OK
360 minute winter	S3	184	4.099	0.049	9.9	0.0140	0.0000	OK
360 minute winter	9450	184	2.673	0.049	9.9	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	SW2	1.000	S21	7.9	1.264	0.096	0.0772	
360 minute winter	S21	1.001	9452	7.9	1.296	0.096	0.1117	67.4
360 minute winter	S3	1.000_1	9450	9.9	1.551	0.104	0.2729	84.4

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Results for 30 year +35% 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	SW2	248	3.283	0.053	9.3	0.0598	0.0000	OK
480 minute summer	S21	248	2.973	0.052	9.3	0.0148	0.0000	OK
480 minute summer	9452	248	2.514	0.051	9.3	0.0000	0.0000	OK
480 minute summer	S3	248	4.104	0.054	11.7	0.0152	0.0000	OK
480 minute summer	9450	248	2.677	0.053	11.7	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	SW2	1.000	S21	9.3	1.319	0.113	0.0872	
480 minute summer	S21	1.001	9452	9.3	1.357	0.113	0.1257	70.7
480 minute summer	S3	1.000_1	9450	11.7	1.626	0.123	0.3078	88.7

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Results for 30 year +35% 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	SW2	248	3.273	0.043	6.2	0.0485	0.0000	OK
480 minute winter	S21	248	2.964	0.043	6.2	0.0121	0.0000	OK
480 minute winter	9452	248	2.505	0.042	6.2	0.0000	0.0000	OK
480 minute winter	S3	248	4.094	0.044	7.8	0.0124	0.0000	OK
480 minute winter	9450	248	2.667	0.043	7.8	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	SW2	1.000	S21	6.2	1.184	0.075	0.0648	
480 minute winter	S21	1.001	9452	6.2	1.210	0.075	0.0940	70.8
480 minute winter	S3	1.000_1	9450	7.8	1.447	0.082	0.2305	89.0

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Results for 30 year +35% 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	SW2	315	3.277	0.047	7.5	0.0535	0.0000	OK
600 minute summer	S21	315	2.968	0.047	7.5	0.0133	0.0000	OK
600 minute summer	9452	315	2.509	0.046	7.5	0.0000	0.0000	OK
600 minute summer	S3	315	4.098	0.048	9.4	0.0136	0.0000	OK
600 minute summer	9450	315	2.672	0.048	9.4	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	SW2	1.000	S21	7.5	1.247	0.091	0.0744	
600 minute summer	S21	1.001	9452	7.5	1.278	0.091	0.1076	73.6
600 minute summer	S3	1.000_1	9450	9.4	1.528	0.099	0.2632	91.7

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Results for 30 year +35% 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	SW2	315	3.269	0.039	5.1	0.0440	0.0000	OK
600 minute winter	S21	315	2.960	0.039	5.1	0.0109	0.0000	OK
600 minute winter	9452	315	2.501	0.038	5.1	0.0000	0.0000	OK
600 minute winter	S3	315	4.090	0.040	6.4	0.0113	0.0000	OK
600 minute winter	9450	315	2.663	0.039	6.4	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	SW2	1.000	S21	5.1	1.122	0.062	0.0562	
600 minute winter	S21	1.001	9452	5.1	1.144	0.062	0.0818	73.7
600 minute winter	S3	1.000_1	9450	6.4	1.366	0.067	0.2005	92.3

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Results for 30 year +35% 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	SW2	375	3.274	0.044	6.6	0.0501	0.0000	OK
720 minute summer	S21	375	2.965	0.044	6.6	0.0125	0.0000	OK
720 minute summer	9452	375	2.506	0.043	6.6	0.0000	0.0000	OK
720 minute summer	S3	375	4.095	0.045	8.2	0.0127	0.0000	OK
720 minute summer	9450	375	2.668	0.044	8.2	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	SW2	1.000	S21	6.6	1.205	0.080	0.0677	
720 minute summer	S21	1.001	9452	6.6	1.232	0.080	0.0982	75.8
720 minute summer	S3	1.000_1	9450	8.2	1.469	0.086	0.2388	94.7

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Results for 30 year +35% 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	SW2	375	3.266	0.036	4.4	0.0408	0.0000	OK
720 minute winter	S21	375	2.957	0.036	4.4	0.0102	0.0000	OK
720 minute winter	9452	375	2.498	0.035	4.4	0.0000	0.0000	OK
720 minute winter	S3	375	4.087	0.037	5.5	0.0105	0.0000	OK
720 minute winter	9450	375	2.661	0.037	5.5	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	SW2	1.000	S21	4.4	1.077	0.053	0.0505	
720 minute winter	S21	1.001	9452	4.4	1.097	0.053	0.0736	75.8
720 minute winter	S3	1.000_1	9450	5.5	1.307	0.058	0.1800	95.4

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Results for 30 year +35% 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	SW2	495	3.269	0.039	5.2	0.0444	0.0000	OK
960 minute summer	S21	495	2.960	0.039	5.2	0.0111	0.0000	OK
960 minute summer	9452	495	2.501	0.038	5.2	0.0000	0.0000	OK
960 minute summer	S3	495	4.090	0.040	6.6	0.0114	0.0000	OK
960 minute summer	9450	495	2.664	0.040	6.6	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	SW2	1.000	S21	5.2	1.128	0.063	0.0570	
960 minute summer	S21	1.001	9452	5.2	1.150	0.063	0.0829	79.4
960 minute summer	S3	1.000_1	9450	6.6	1.378	0.069	0.2049	99.8

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Results for 30 year +35% 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	SW2	495	3.262	0.032	3.5	0.0364	0.0000	OK
960 minute winter	S21	495	2.953	0.032	3.5	0.0091	0.0000	OK
960 minute winter	9452	495	2.495	0.032	3.5	0.0000	0.0000	OK
960 minute winter	S3	495	4.083	0.033	4.4	0.0094	0.0000	OK
960 minute winter	9450	495	2.657	0.033	4.4	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	SW2	1.000	S21	3.5	1.010	0.042	0.0428	
960 minute winter	S21	1.001	9452	3.5	1.026	0.042	0.0626	79.7
960 minute winter	S3	1.000_1	9450	4.4	1.224	0.046	0.1537	99.8

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Results for 30 year +35% 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	SW2	750	3.263	0.033	3.7	0.0375	0.0000	OK
1440 minute summer	S21	750	2.954	0.033	3.7	0.0093	0.0000	OK
1440 minute summer	9452	750	2.495	0.032	3.7	0.0000	0.0000	OK
1440 minute summer	S3	750	4.084	0.034	4.6	0.0096	0.0000	OK
1440 minute summer	9450	750	2.658	0.034	4.6	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	SW2	1.000	S21	3.7	1.026	0.045	0.0446	
1440 minute summer	S21	1.001	9452	3.7	1.043	0.045	0.0651	84.1
1440 minute summer	S3	1.000_1	9450	4.6	1.241	0.048	0.1586	105.5

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Results for 30 year +35% 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	SW2	750	3.257	0.027	2.5	0.0309	0.0000	OK
1440 minute winter	S21	750	2.948	0.027	2.5	0.0077	0.0000	OK
1440 minute winter	9452	750	2.490	0.027	2.5	0.0000	0.0000	OK
1440 minute winter	S3	750	4.078	0.028	3.1	0.0079	0.0000	OK
1440 minute winter	9450	750	2.652	0.028	3.1	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	SW2	1.000	S21	2.5	0.917	0.030	0.0337	
1440 minute winter	S21	1.001	9452	2.5	0.928	0.030	0.0494	84.8
1440 minute winter	S3	1.000_1	9450	3.1	1.102	0.033	0.1203	106.0

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Results for 30 year +35% CC 2160 minute summer. 2400 minute analysis at 60 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
2160 minute summer	SW2	1140	3.257	0.027	2.5	0.0309	0.0000	OK
2160 minute summer	S21	1140	2.948	0.027	2.5	0.0077	0.0000	OK
2160 minute summer	9452	1140	2.490	0.027	2.5	0.0000	0.0000	OK
2160 minute summer	S3	1140	4.078	0.028	3.2	0.0080	0.0000	OK
2160 minute summer	9450	1140	2.652	0.028	3.2	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)
2160 minute summer	SW2	1.000	S21	2.5	0.917	0.030	0.0337	
2160 minute summer	S21	1.001	9452	2.5	0.928	0.030	0.0494	90.1
2160 minute summer	S3	1.000_1	9450	3.2	1.113	0.034	0.1230	113.4

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Results for 30 year +35% CC 2160 minute winter. 2400 minute analysis at 60 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
2160 minute winter	SW2	1140	3.253	0.023	1.8	0.0264	0.0000	OK
2160 minute winter	S21	1140	2.944	0.023	1.8	0.0066	0.0000	OK
2160 minute winter	9452	1140	2.486	0.023	1.8	0.0000	0.0000	OK
2160 minute winter	S3	1140	4.074	0.024	2.2	0.0067	0.0000	OK
2160 minute winter	9450	1140	2.648	0.024	2.2	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)
2160 minute winter	SW2	1.000	S21	1.8	0.833	0.022	0.0267	
2160 minute winter	S21	1.001	9452	1.8	0.842	0.022	0.0392	90.4
2160 minute winter	S3	1.000_1	9450	2.2	0.994	0.023	0.0946	114.9

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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	SW2	10	3.379	0.149	53.8	0.1686	0.0000	OK
15 minute summer	S21	10	3.065	0.144	53.7	0.0408	0.0000	OK
15 minute summer	9452	10	2.594	0.131	53.3	0.0000	0.0000	OK
15 minute summer	S3	10	4.195	0.145	67.4	0.0412	0.0000	OK
15 minute summer	9450	10	2.762	0.138	67.1	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	SW2	1.000	S21	53.7	1.961	0.651	0.3385	
15 minute summer	S21	1.001	9452	53.3	2.101	0.647	0.4655	23.3
15 minute summer	S3	1.000_1	9450	67.1	2.546	0.703	1.1265	29.2

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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	SW2	10	3.372	0.142	50.5	0.1610	0.0000	OK
15 minute winter	S21	10	3.059	0.138	50.4	0.0390	0.0000	OK
15 minute winter	9452	10	2.588	0.125	49.9	0.0000	0.0000	OK
15 minute winter	S3	10	4.189	0.139	63.3	0.0394	0.0000	OK
15 minute winter	9450	10	2.756	0.132	62.9	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	SW2	1.000	S21	50.4	1.940	0.611	0.3209	
15 minute winter	S21	1.001	9452	49.9	2.072	0.606	0.4418	23.3
15 minute winter	S3	1.000_1	9450	62.9	2.512	0.660	1.0703	29.2

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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	SW2	17	3.370	0.140	49.6	0.1587	0.0000	OK
30 minute summer	S21	18	3.058	0.137	49.6	0.0386	0.0000	OK
30 minute summer	9452	18	2.588	0.125	49.6	0.0000	0.0000	OK
30 minute summer	S3	18	4.187	0.137	62.1	0.0389	0.0000	OK
30 minute summer	9450	18	2.755	0.131	62.1	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	SW2	1.000	S21	49.6	1.936	0.601	0.3167	
30 minute summer	S21	1.001	9452	49.6	2.074	0.602	0.4385	31.3
30 minute summer	S3	1.000_1	9450	62.1	2.510	0.652	1.0579	39.2

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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	SW2	17	3.351	0.121	40.1	0.1373	0.0000	OK
30 minute winter	S21	18	3.040	0.119	40.1	0.0336	0.0000	OK
30 minute winter	9452	18	2.573	0.110	40.1	0.0000	0.0000	OK
30 minute winter	S3	18	4.170	0.120	50.2	0.0339	0.0000	OK
30 minute winter	9450	18	2.739	0.115	50.2	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	SW2	1.000	S21	40.1	1.862	0.486	0.2663	
30 minute winter	S21	1.001	9452	40.1	1.980	0.486	0.3713	31.3
30 minute winter	S3	1.000_1	9450	50.2	2.395	0.527	0.8966	39.3

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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	SW2	32	3.347	0.117	38.0	0.1327	0.0000	OK
60 minute summer	S21	33	3.036	0.115	38.0	0.0325	0.0000	OK
60 minute summer	9452	33	2.570	0.107	38.0	0.0000	0.0000	OK
60 minute summer	S3	33	4.166	0.116	47.6	0.0328	0.0000	OK
60 minute summer	9450	33	2.736	0.112	47.6	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	SW2	1.000	S21	38.0	1.842	0.461	0.2550	
60 minute summer	S21	1.001	9452	38.0	1.956	0.461	0.3562	40.2
60 minute summer	S3	1.000_1	9450	47.6	2.365	0.499	0.8609	50.4

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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	SW2	33	3.326	0.096	27.4	0.1085	0.0000	OK
60 minute winter	S21	33	3.015	0.094	27.4	0.0267	0.0000	OK
60 minute winter	9452	33	2.552	0.089	27.4	0.0000	0.0000	OK
60 minute winter	S3	33	4.146	0.096	34.4	0.0271	0.0000	OK
60 minute winter	9450	33	2.717	0.093	34.4	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	SW2	1.000	S21	27.4	1.719	0.332	0.1971	
60 minute winter	S21	1.001	9452	27.4	1.808	0.332	0.2779	40.3
60 minute winter	S3	1.000_1	9450	34.4	2.182	0.361	0.6743	50.4

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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	SW2	62	3.320	0.090	24.5	0.1016	0.0000	OK
120 minute summer	S21	64	3.009	0.088	24.5	0.0250	0.0000	OK
120 minute summer	9452	64	2.547	0.084	24.5	0.0000	0.0000	OK
120 minute summer	S3	64	4.140	0.090	30.6	0.0253	0.0000	OK
120 minute summer	9450	64	2.711	0.087	30.6	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	SW2	1.000	S21	24.5	1.677	0.297	0.1807	
120 minute summer	S21	1.001	9452	24.5	1.758	0.297	0.2555	48.6
120 minute summer	S3	1.000_1	9450	30.6	2.117	0.321	0.6182	61.0

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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	SW2	64	3.303	0.073	16.8	0.0821	0.0000	OK
120 minute winter	S21	64	2.993	0.072	16.8	0.0203	0.0000	OK
120 minute winter	9452	64	2.532	0.069	16.8	0.0000	0.0000	OK
120 minute winter	S3	64	4.123	0.073	21.1	0.0207	0.0000	OK
120 minute winter	9450	64	2.696	0.072	21.1	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	SW2	1.000	S21	16.8	1.533	0.204	0.1355	
120 minute winter	S21	1.001	9452	16.8	1.594	0.204	0.1933	48.7
120 minute winter	S3	1.000_1	9450	21.1	1.916	0.221	0.4710	61.0

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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	SW2	96	3.305	0.075	18.0	0.0853	0.0000	OK
180 minute summer	S21	96	2.995	0.074	18.0	0.0211	0.0000	OK
180 minute summer	9452	96	2.534	0.071	18.0	0.0000	0.0000	OK
180 minute summer	S3	96	4.126	0.076	22.6	0.0215	0.0000	OK
180 minute summer	9450	96	2.698	0.074	22.6	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	SW2	1.000	S21	18.0	1.559	0.218	0.1428	
180 minute summer	S21	1.001	9452	18.0	1.623	0.218	0.2034	53.6
180 minute summer	S3	1.000_1	9450	22.6	1.952	0.237	0.4952	67.1

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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	SW2	96	3.292	0.062	12.4	0.0696	0.0000	OK
180 minute winter	S21	96	2.982	0.061	12.4	0.0172	0.0000	OK
180 minute winter	9452	96	2.522	0.059	12.4	0.0000	0.0000	OK
180 minute winter	S3	96	4.112	0.062	15.5	0.0176	0.0000	OK
180 minute winter	9450	96	2.685	0.061	15.5	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	SW2	1.000	S21	12.4	1.421	0.150	0.1079	
180 minute winter	S21	1.001	9452	12.4	1.469	0.150	0.1548	53.6
180 minute winter	S3	1.000_1	9450	15.5	1.760	0.163	0.3767	67.3

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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	SW2	124	3.298	0.068	15.1	0.0774	0.0000	OK
240 minute summer	S21	124	2.989	0.068	15.1	0.0191	0.0000	OK
240 minute summer	9452	124	2.528	0.065	15.0	0.0000	0.0000	OK
240 minute summer	S3	124	4.119	0.069	18.9	0.0195	0.0000	OK
240 minute summer	9450	124	2.692	0.068	18.8	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	SW2	1.000	S21	15.1	1.493	0.183	0.1248	
240 minute summer	S21	1.001	9452	15.0	1.547	0.182	0.1782	57.1
240 minute summer	S3	1.000_1	9450	18.8	1.858	0.198	0.4339	71.6

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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	SW2	124	3.285	0.055	10.0	0.0621	0.0000	OK
240 minute winter	S21	124	2.975	0.054	10.0	0.0154	0.0000	OK
240 minute winter	9452	124	2.516	0.053	10.0	0.0000	0.0000	OK
240 minute winter	S3	124	4.106	0.056	12.5	0.0158	0.0000	OK
240 minute winter	9450	124	2.679	0.055	12.5	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	SW2	1.000	S21	10.0	1.345	0.121	0.0919	
240 minute winter	S21	1.001	9452	10.0	1.384	0.121	0.1324	57.3
240 minute winter	S3	1.000_1	9450	12.5	1.656	0.131	0.3227	71.9

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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	SW2	184	3.288	0.058	11.2	0.0659	0.0000	OK
360 minute summer	S21	184	2.979	0.058	11.2	0.0163	0.0000	OK
360 minute summer	9452	184	2.519	0.056	11.1	0.0000	0.0000	OK
360 minute summer	S3	184	4.109	0.059	14.0	0.0167	0.0000	OK
360 minute summer	9450	184	2.682	0.058	14.0	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	SW2	1.000	S21	11.2	1.384	0.136	0.0999	
360 minute summer	S21	1.001	9452	11.1	1.426	0.135	0.1434	62.1
360 minute summer	S3	1.000_1	9450	14.0	1.708	0.146	0.3494	77.6

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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	SW2	184	3.277	0.047	7.3	0.0527	0.0000	OK
360 minute winter	S21	184	2.967	0.046	7.3	0.0131	0.0000	OK
360 minute winter	9452	184	2.508	0.045	7.3	0.0000	0.0000	OK
360 minute winter	S3	184	4.097	0.047	9.1	0.0134	0.0000	OK
360 minute winter	9450	184	2.671	0.047	9.1	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	SW2	1.000	S21	7.3	1.237	0.088	0.0729	
360 minute winter	S21	1.001	9452	7.3	1.268	0.088	0.1055	62.2
360 minute winter	S3	1.000_1	9450	9.1	1.513	0.095	0.2571	77.9

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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	SW2	248	3.281	0.051	8.6	0.0574	0.0000	OK
480 minute summer	S21	248	2.971	0.050	8.6	0.0143	0.0000	OK
480 minute summer	9452	248	2.512	0.049	8.6	0.0000	0.0000	OK
480 minute summer	S3	248	4.102	0.052	10.8	0.0146	0.0000	OK
480 minute summer	9450	248	2.675	0.051	10.8	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	SW2	1.000	S21	8.6	1.293	0.104	0.0822	
480 minute summer	S21	1.001	9452	8.6	1.328	0.104	0.1188	65.5
480 minute summer	S3	1.000_1	9450	10.8	1.589	0.113	0.2906	82.1

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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	SW2	248	3.271	0.041	5.7	0.0465	0.0000	OK
480 minute winter	S21	248	2.962	0.041	5.7	0.0116	0.0000	OK
480 minute winter	9452	248	2.503	0.040	5.7	0.0000	0.0000	OK
480 minute winter	S3	248	4.092	0.042	7.2	0.0119	0.0000	OK
480 minute winter	9450	248	2.666	0.042	7.2	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	SW2	1.000	S21	5.7	1.156	0.069	0.0609	
480 minute winter	S21	1.001	9452	5.7	1.181	0.069	0.0885	65.7
480 minute winter	S3	1.000_1	9450	7.2	1.413	0.076	0.2179	82.5

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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	SW2	315	3.276	0.046	7.0	0.0516	0.0000	OK
600 minute summer	S21	315	2.966	0.045	7.0	0.0128	0.0000	OK
600 minute summer	9452	315	2.507	0.044	7.0	0.0000	0.0000	OK
600 minute summer	S3	315	4.096	0.046	8.7	0.0131	0.0000	OK
600 minute summer	9450	315	2.670	0.046	8.7	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	SW2	1.000	S21	7.0	1.224	0.085	0.0707	
600 minute summer	S21	1.001	9452	7.0	1.253	0.085	0.1024	68.1
600 minute summer	S3	1.000_1	9450	8.7	1.494	0.091	0.2491	85.0

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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	SW2	315	3.268	0.038	4.8	0.0427	0.0000	OK
600 minute winter	S21	315	2.959	0.038	4.8	0.0106	0.0000	OK
600 minute winter	9452	315	2.500	0.037	4.8	0.0000	0.0000	OK
600 minute winter	S3	315	4.089	0.039	6.0	0.0109	0.0000	OK
600 minute winter	9450	315	2.662	0.038	6.0	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	SW2	1.000	S21	4.8	1.103	0.058	0.0538	
600 minute winter	S21	1.001	9452	4.8	1.124	0.058	0.0783	68.1
600 minute winter	S3	1.000_1	9450	6.0	1.340	0.063	0.1915	86.2

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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	SW2	375	3.273	0.043	6.1	0.0481	0.0000	OK
720 minute summer	S21	375	2.963	0.042	6.1	0.0120	0.0000	OK
720 minute summer	9452	375	2.504	0.041	6.1	0.0000	0.0000	OK
720 minute summer	S3	375	4.093	0.043	7.6	0.0123	0.0000	OK
720 minute summer	9450	375	2.667	0.043	7.6	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	SW2	1.000	S21	6.1	1.178	0.074	0.0640	
720 minute summer	S21	1.001	9452	6.1	1.204	0.074	0.0929	70.2
720 minute summer	S3	1.000_1	9450	7.6	1.436	0.080	0.2263	88.2

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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	SW2	375	3.265	0.035	4.1	0.0394	0.0000	OK
720 minute winter	S21	375	2.956	0.035	4.1	0.0098	0.0000	OK
720 minute winter	9452	375	2.497	0.034	4.1	0.0000	0.0000	OK
720 minute winter	S3	375	4.086	0.036	5.1	0.0101	0.0000	OK
720 minute winter	9450	375	2.659	0.035	5.1	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	SW2	1.000	S21	4.1	1.057	0.050	0.0480	
720 minute winter	S21	1.001	9452	4.1	1.075	0.050	0.0699	70.3
720 minute winter	S3	1.000_1	9450	5.1	1.279	0.054	0.1706	88.2

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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	SW2	495	3.268	0.038	4.9	0.0431	0.0000	OK
960 minute summer	S21	495	2.959	0.038	4.9	0.0107	0.0000	OK
960 minute summer	9452	495	2.500	0.037	4.9	0.0000	0.0000	OK
960 minute summer	S3	495	4.089	0.039	6.1	0.0110	0.0000	OK
960 minute summer	9450	495	2.662	0.038	6.1	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	SW2	1.000	S21	4.9	1.109	0.059	0.0546	
960 minute summer	S21	1.001	9452	4.9	1.131	0.059	0.0795	73.7
960 minute summer	S3	1.000_1	9450	6.1	1.347	0.064	0.1938	91.9

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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	SW2	480	3.261	0.031	3.2	0.0349	0.0000	OK
960 minute winter	S21	480	2.952	0.031	3.2	0.0087	0.0000	OK
960 minute winter	9452	480	2.493	0.030	3.2	0.0000	0.0000	OK
960 minute winter	S3	480	4.082	0.032	4.0	0.0089	0.0000	OK
960 minute winter	9450	480	2.655	0.031	4.0	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	SW2	1.000	S21	3.2	0.985	0.039	0.0402	
960 minute winter	S21	1.001	9452	3.2	1.000	0.039	0.0587	74.3
960 minute winter	S3	1.000_1	9450	4.0	1.190	0.042	0.1438	92.4

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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	SW2	750	3.262	0.032	3.4	0.0359	0.0000	OK
1440 minute summer	S21	750	2.953	0.032	3.4	0.0090	0.0000	OK
1440 minute summer	9452	750	2.494	0.031	3.4	0.0000	0.0000	OK
1440 minute summer	S3	750	4.083	0.033	4.3	0.0093	0.0000	OK
1440 minute summer	9450	750	2.656	0.032	4.3	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	SW2	1.000	S21	3.4	1.002	0.041	0.0420	
1440 minute summer	S21	1.001	9452	3.4	1.017	0.041	0.0613	77.6
1440 minute summer	S3	1.000_1	9450	4.3	1.216	0.045	0.1513	98.3

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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	SW2	750	3.256	0.026	2.3	0.0297	0.0000	OK
1440 minute winter	S21	750	2.947	0.026	2.3	0.0074	0.0000	OK
1440 minute winter	9452	750	2.489	0.026	2.3	0.0000	0.0000	OK
1440 minute winter	S3	750	4.077	0.027	2.9	0.0077	0.0000	OK
1440 minute winter	9450	750	2.651	0.027	2.9	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	SW2	1.000	S21	2.3	0.895	0.028	0.0318	
1440 minute winter	S21	1.001	9452	2.3	0.906	0.028	0.0466	78.2
1440 minute winter	S3	1.000_1	9450	2.9	1.080	0.030	0.1148	99.6

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Results for 100 year 2160 minute summer. 2400 minute analysis at 60 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
2160 minute summer	SW2	1140	3.257	0.027	2.4	0.0303	0.0000	OK
2160 minute summer	S21	1140	2.948	0.027	2.4	0.0076	0.0000	OK
2160 minute summer	9452	1140	2.489	0.026	2.4	0.0000	0.0000	OK
2160 minute summer	S3	1140	4.077	0.027	2.9	0.0077	0.0000	OK
2160 minute summer	9450	1140	2.651	0.027	2.9	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)
2160 minute summer	SW2	1.000	S21	2.4	0.906	0.029	0.0328	
2160 minute summer	S21	1.001	9452	2.4	0.917	0.029	0.0480	82.9
2160 minute summer	S3	1.000_1	9450	2.9	1.080	0.030	0.1148	105.5

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Results for 100 year 2160 minute winter. 2400 minute analysis at 60 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
2160 minute winter	SW2	1140	3.252	0.022	1.6	0.0249	0.0000	OK
2160 minute winter	S21	1140	2.943	0.022	1.6	0.0062	0.0000	OK
2160 minute winter	9452	1140	2.485	0.022	1.6	0.0000	0.0000	OK
2160 minute winter	S3	1140	4.073	0.023	2.0	0.0064	0.0000	OK
2160 minute winter	9450	1140	2.647	0.023	2.0	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)
2160 minute winter	SW2	1.000	S21	1.6	0.805	0.019	0.0246	
2160 minute winter	S21	1.001	9452	1.6	0.813	0.019	0.0361	85.4
2160 minute winter	S3	1.000_1	9450	2.0	0.966	0.021	0.0885	106.2

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Results for 100 year +45% 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	SW2	11	3.471	0.241	78.2	0.2728	0.0000	SURCHARGED
15 minute summer	S21	11	3.116	0.195	75.3	0.0551	0.0000	OK
15 minute summer	9452	11	2.631	0.168	75.9	0.0000	0.0000	OK
15 minute summer	S3	10	4.249	0.199	97.9	0.0563	0.0000	OK
15 minute summer	9450	11	2.852	0.228	96.8	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	SW2	1.000	S21	75.3	2.021	0.913	0.4717	
15 minute summer	S21	1.001	9452	75.9	2.213	0.921	0.6272	33.7
15 minute summer	S3	1.000_1	9450	96.8	2.647	1.016	1.6452	42.3

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Results for 100 year +45% 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	SW2	10	3.427	0.197	73.2	0.2233	0.0000	OK
15 minute winter	S21	10	3.106	0.185	72.8	0.0524	0.0000	OK
15 minute winter	9452	10	2.624	0.161	72.1	0.0000	0.0000	OK
15 minute winter	S3	10	4.239	0.189	91.8	0.0536	0.0000	OK
15 minute winter	9450	10	2.798	0.174	90.9	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	SW2	1.000	S21	72.8	2.023	0.883	0.4445	
15 minute winter	S21	1.001	9452	72.1	2.204	0.875	0.5999	33.8
15 minute winter	S3	1.000_1	9450	90.9	2.659	0.953	1.4660	42.3

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Results for 100 year +45% 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	SW2	18	3.423	0.193	71.9	0.2187	0.0000	OK
30 minute summer	S21	18	3.105	0.184	71.9	0.0520	0.0000	OK
30 minute summer	9452	18	2.624	0.161	71.9	0.0000	0.0000	OK
30 minute summer	S3	18	4.236	0.186	90.1	0.0527	0.0000	OK
30 minute summer	9450	18	2.796	0.172	90.1	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	SW2	1.000	S21	71.9	2.023	0.872	0.4391	
30 minute summer	S21	1.001	9452	71.9	2.203	0.872	0.5970	45.4
30 minute summer	S3	1.000_1	9450	90.1	2.655	0.945	1.4498	56.8

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Results for 100 year +45% 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	SW2	18	3.388	0.158	58.1	0.1787	0.0000	OK
30 minute winter	S21	18	3.074	0.153	58.1	0.0433	0.0000	OK
30 minute winter	9452	18	2.601	0.138	58.1	0.0000	0.0000	OK
30 minute winter	S3	18	4.204	0.154	72.8	0.0436	0.0000	OK
30 minute winter	9450	18	2.770	0.146	72.8	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	SW2	1.000	S21	58.1	1.985	0.705	0.3618	
30 minute winter	S21	1.001	9452	58.1	2.138	0.705	0.4980	45.4
30 minute winter	S3	1.000_1	9450	72.8	2.589	0.764	1.2024	56.9

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Results for 100 year +45% 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	SW2	33	3.382	0.152	55.1	0.1715	0.0000	OK
60 minute summer	S21	33	3.068	0.147	55.1	0.0416	0.0000	OK
60 minute summer	9452	33	2.597	0.134	55.1	0.0000	0.0000	OK
60 minute summer	S3	33	4.198	0.148	69.0	0.0419	0.0000	OK
60 minute summer	9450	33	2.765	0.141	69.0	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	SW2	1.000	S21	55.1	1.970	0.668	0.3458	
60 minute summer	S21	1.001	9452	55.1	2.117	0.668	0.4770	58.4
60 minute summer	S3	1.000_1	9450	69.0	2.564	0.724	1.1510	73.1

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Results for 100 year +45% 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	SW2	33	3.351	0.121	39.8	0.1367	0.0000	OK
60 minute winter	S21	33	3.039	0.118	39.8	0.0334	0.0000	OK
60 minute winter	9452	33	2.573	0.110	39.8	0.0000	0.0000	OK
60 minute winter	S3	33	4.169	0.119	49.8	0.0337	0.0000	OK
60 minute winter	9450	33	2.739	0.115	49.8	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	SW2	1.000	S21	39.8	1.859	0.483	0.2647	
60 minute winter	S21	1.001	9452	39.8	1.977	0.483	0.3692	58.3
60 minute winter	S3	1.000_1	9450	49.8	2.390	0.523	0.8911	73.1

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Results for 100 year +45% 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	SW2	62	3.342	0.112	35.5	0.1270	0.0000	OK
120 minute summer	S21	64	3.031	0.110	35.5	0.0311	0.0000	OK
120 minute summer	9452	64	2.566	0.103	35.5	0.0000	0.0000	OK
120 minute summer	S3	64	4.161	0.111	44.4	0.0314	0.0000	OK
120 minute summer	9450	64	2.731	0.107	44.4	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	SW2	1.000	S21	35.5	1.817	0.430	0.2415	
120 minute summer	S21	1.001	9452	35.5	1.925	0.431	0.3381	70.6
120 minute summer	S3	1.000_1	9450	44.4	2.326	0.466	0.8165	88.3

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Results for 100 year +45% 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	SW2	64	3.320	0.090	24.4	0.1013	0.0000	OK
120 minute winter	S21	64	3.009	0.088	24.4	0.0250	0.0000	OK
120 minute winter	9452	64	2.546	0.083	24.4	0.0000	0.0000	OK
120 minute winter	S3	64	4.140	0.090	30.6	0.0253	0.0000	OK
120 minute winter	9450	64	2.711	0.087	30.6	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	SW2	1.000	S21	24.4	1.675	0.296	0.1801	
120 minute winter	S21	1.001	9452	24.4	1.756	0.296	0.2548	70.6
120 minute winter	S3	1.000_1	9450	30.6	2.117	0.321	0.6182	88.3

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Results for 100 year +45% 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	SW2	96	3.323	0.093	26.1	0.1054	0.0000	OK
180 minute summer	S21	96	3.013	0.092	26.1	0.0259	0.0000	OK
180 minute summer	9452	96	2.550	0.087	26.1	0.0000	0.0000	OK
180 minute summer	S3	96	4.143	0.093	32.7	0.0263	0.0000	OK
180 minute summer	9450	96	2.714	0.090	32.7	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	SW2	1.000	S21	26.1	1.700	0.317	0.1898	
180 minute summer	S21	1.001	9452	26.1	1.787	0.317	0.2680	77.7
180 minute summer	S3	1.000_1	9450	32.7	2.154	0.343	0.6494	97.2

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Results for 100 year +45% 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	SW2	96	3.305	0.075	18.0	0.0853	0.0000	OK
180 minute winter	S21	96	2.995	0.074	18.0	0.0211	0.0000	OK
180 minute winter	9452	96	2.534	0.071	18.0	0.0000	0.0000	OK
180 minute winter	S3	96	4.126	0.076	22.5	0.0214	0.0000	OK
180 minute winter	9450	96	2.698	0.074	22.5	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	SW2	1.000	S21	18.0	1.559	0.218	0.1428	
180 minute winter	S21	1.001	9452	18.0	1.623	0.218	0.2034	77.8
180 minute winter	S3	1.000_1	9450	22.5	1.950	0.236	0.4936	97.5

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Results for 100 year +45% 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	SW2	124	3.314	0.084	21.8	0.0950	0.0000	OK
240 minute summer	S21	124	3.004	0.083	21.8	0.0234	0.0000	OK
240 minute summer	9452	124	2.541	0.078	21.7	0.0000	0.0000	OK
240 minute summer	S3	124	4.134	0.084	27.4	0.0238	0.0000	OK
240 minute summer	9450	124	2.706	0.082	27.3	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	SW2	1.000	S21	21.8	1.631	0.264	0.1650	
240 minute summer	S21	1.001	9452	21.7	1.704	0.263	0.2337	82.9
240 minute summer	S3	1.000_1	9450	27.3	2.054	0.287	0.5691	103.9

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Results for 100 year +45% 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	SW2	124	3.297	0.067	14.5	0.0757	0.0000	OK
240 minute winter	S21	124	2.987	0.066	14.5	0.0187	0.0000	OK
240 minute winter	9452	124	2.527	0.064	14.5	0.0000	0.0000	OK
240 minute winter	S3	124	4.118	0.068	18.2	0.0191	0.0000	OK
240 minute winter	9450	124	2.690	0.066	18.2	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	SW2	1.000	S21	14.5	1.478	0.176	0.1212	
240 minute winter	S21	1.001	9452	14.5	1.532	0.176	0.1734	83.1
240 minute winter	S3	1.000_1	9450	18.2	1.840	0.191	0.4228	104.1

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Results for 100 year +45% 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	SW2	184	3.301	0.071	16.2	0.0805	0.0000	OK
360 minute summer	S21	184	2.991	0.070	16.2	0.0199	0.0000	OK
360 minute summer	9452	184	2.530	0.067	16.1	0.0000	0.0000	OK
360 minute summer	S3	184	4.122	0.072	20.4	0.0203	0.0000	OK
360 minute summer	9450	184	2.694	0.070	20.3	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	SW2	1.000	S21	16.2	1.519	0.196	0.1317	
360 minute summer	S21	1.001	9452	16.1	1.576	0.196	0.1877	89.9
360 minute summer	S3	1.000_1	9450	20.3	1.896	0.213	0.4588	112.4

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Results for 100 year +45% 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	SW2	184	3.287	0.057	10.6	0.0641	0.0000	OK
360 minute winter	S21	184	2.977	0.056	10.6	0.0159	0.0000	OK
360 minute winter	9452	184	2.517	0.054	10.6	0.0000	0.0000	OK
360 minute winter	S3	184	4.107	0.057	13.2	0.0162	0.0000	OK
360 minute winter	9450	184	2.680	0.056	13.2	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	SW2	1.000	S21	10.6	1.365	0.128	0.0960	
360 minute winter	S21	1.001	9452	10.6	1.406	0.128	0.1381	90.2
360 minute winter	S3	1.000_1	9450	13.2	1.682	0.138	0.3356	112.8

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Results for 100 year +45% 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	SW2	248	3.292	0.062	12.5	0.0699	0.0000	OK
480 minute summer	S21	248	2.982	0.061	12.5	0.0173	0.0000	OK
480 minute summer	9452	248	2.522	0.059	12.5	0.0000	0.0000	OK
480 minute summer	S3	248	4.113	0.063	15.7	0.0177	0.0000	OK
480 minute summer	9450	248	2.686	0.062	15.7	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	SW2	1.000	S21	12.5	1.424	0.152	0.1085	
480 minute summer	S21	1.001	9452	12.5	1.472	0.152	0.1557	95.0
480 minute summer	S3	1.000_1	9450	15.7	1.766	0.165	0.3802	118.9

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Results for 100 year +45% 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	SW2	248	3.280	0.050	8.3	0.0564	0.0000	OK
480 minute winter	S21	248	2.970	0.049	8.3	0.0140	0.0000	OK
480 minute winter	9452	248	2.511	0.048	8.3	0.0000	0.0000	OK
480 minute winter	S3	248	4.101	0.051	10.4	0.0143	0.0000	OK
480 minute winter	9450	248	2.674	0.050	10.4	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	SW2	1.000	S21	8.3	1.281	0.101	0.0801	
480 minute winter	S21	1.001	9452	8.3	1.315	0.101	0.1158	95.5
480 minute winter	S3	1.000_1	9450	10.4	1.573	0.109	0.2828	119.4

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Results for 100 year +45% 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	SW2	315	3.285	0.055	10.1	0.0625	0.0000	OK
600 minute summer	S21	315	2.976	0.055	10.1	0.0155	0.0000	OK
600 minute summer	9452	315	2.516	0.053	10.1	0.0000	0.0000	OK
600 minute summer	S3	315	4.106	0.056	12.6	0.0158	0.0000	OK
600 minute summer	9450	315	2.679	0.055	12.6	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	SW2	1.000	S21	10.1	1.348	0.122	0.0926	
600 minute summer	S21	1.001	9452	10.1	1.388	0.123	0.1334	98.6
600 minute summer	S3	1.000_1	9450	12.6	1.660	0.132	0.3246	123.3

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Results for 100 year +45% 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	SW2	315	3.275	0.045	6.9	0.0513	0.0000	OK
600 minute winter	S21	315	2.966	0.045	6.9	0.0127	0.0000	OK
600 minute winter	9452	315	2.507	0.044	6.9	0.0000	0.0000	OK
600 minute winter	S3	315	4.096	0.046	8.6	0.0130	0.0000	OK
600 minute winter	9450	315	2.670	0.046	8.6	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	SW2	1.000	S21	6.9	1.219	0.084	0.0700	
600 minute winter	S21	1.001	9452	6.9	1.248	0.084	0.1014	99.3
600 minute winter	S3	1.000_1	9450	8.6	1.489	0.090	0.2470	124.2

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Results for 100 year +45% 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	SW2	375	3.282	0.052	8.9	0.0584	0.0000	OK
720 minute summer	S21	375	2.972	0.051	8.9	0.0145	0.0000	OK
720 minute summer	9452	375	2.513	0.050	8.9	0.0000	0.0000	OK
720 minute summer	S3	375	4.102	0.052	11.1	0.0148	0.0000	OK
720 minute summer	9450	375	2.676	0.052	11.1	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	SW2	1.000	S21	8.9	1.304	0.108	0.0844	
720 minute summer	S21	1.001	9452	8.9	1.341	0.108	0.1217	101.8
720 minute summer	S3	1.000_1	9450	11.1	1.602	0.116	0.2964	127.5

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Results for 100 year +45% 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	SW2	375	3.272	0.042	5.9	0.0473	0.0000	OK
720 minute winter	S21	375	2.963	0.042	5.9	0.0118	0.0000	OK
720 minute winter	9452	375	2.504	0.041	5.9	0.0000	0.0000	OK
720 minute winter	S3	375	4.093	0.043	7.5	0.0122	0.0000	OK
720 minute winter	9450	375	2.667	0.043	7.5	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	SW2	1.000	S21	5.9	1.167	0.072	0.0625	
720 minute winter	S21	1.001	9452	5.9	1.193	0.072	0.0907	102.5
720 minute winter	S3	1.000_1	9450	7.5	1.431	0.079	0.2242	127.9

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Results for 100 year +45% 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	SW2	495	3.276	0.046	7.1	0.0520	0.0000	OK
960 minute summer	S21	495	2.967	0.046	7.1	0.0129	0.0000	OK
960 minute summer	9452	495	2.507	0.044	7.1	0.0000	0.0000	OK
960 minute summer	S3	495	4.097	0.047	8.9	0.0133	0.0000	OK
960 minute summer	9450	495	2.670	0.046	8.9	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	SW2	1.000	S21	7.1	1.228	0.086	0.0715	
960 minute summer	S21	1.001	9452	7.1	1.258	0.086	0.1035	107.3
960 minute summer	S3	1.000_1	9450	8.9	1.504	0.093	0.2531	134.2

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Results for 100 year +45% 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	SW2	495	3.267	0.037	4.7	0.0422	0.0000	OK
960 minute winter	S21	495	2.958	0.037	4.7	0.0105	0.0000	OK
960 minute winter	9452	495	2.499	0.036	4.7	0.0000	0.0000	OK
960 minute winter	S3	495	4.088	0.038	5.9	0.0108	0.0000	OK
960 minute winter	9450	495	2.662	0.038	5.9	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	SW2	1.000	S21	4.7	1.097	0.057	0.0530	
960 minute winter	S21	1.001	9452	4.7	1.117	0.057	0.0771	106.9
960 minute winter	S3	1.000_1	9450	5.9	1.334	0.062	0.1892	133.8

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Results for 100 year +45% 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	SW2	750	3.268	0.038	4.9	0.0431	0.0000	OK
1440 minute summer	S21	750	2.959	0.038	4.9	0.0107	0.0000	OK
1440 minute summer	9452	750	2.500	0.037	4.9	0.0000	0.0000	OK
1440 minute summer	S3	750	4.089	0.039	6.2	0.0111	0.0000	OK
1440 minute summer	9450	750	2.663	0.039	6.2	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	SW2	1.000	S21	4.9	1.109	0.059	0.0546	
1440 minute summer	S21	1.001	9452	4.9	1.131	0.059	0.0795	113.5
1440 minute summer	S3	1.000_1	9450	6.2	1.353	0.065	0.1960	142.4

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Results for 100 year +45% 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	SW2	750	3.261	0.031	3.3	0.0354	0.0000	OK
1440 minute winter	S21	750	2.952	0.031	3.3	0.0088	0.0000	OK
1440 minute winter	9452	750	2.494	0.031	3.3	0.0000	0.0000	OK
1440 minute winter	S3	750	4.082	0.032	4.2	0.0092	0.0000	OK
1440 minute winter	9450	750	2.656	0.032	4.2	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	SW2	1.000	S21	3.3	0.993	0.040	0.0411	
1440 minute winter	S21	1.001	9452	3.3	1.009	0.040	0.0600	114.3
1440 minute winter	S3	1.000_1	9450	4.2	1.207	0.044	0.1488	142.4

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Results for 100 year +45% CC 2160 minute summer. 2400 minute analysis at 60 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
2160 minute summer	SW2	1140	3.262	0.032	3.4	0.0359	0.0000	OK
2160 minute summer	S21	1140	2.953	0.032	3.4	0.0090	0.0000	OK
2160 minute summer	9452	1140	2.494	0.031	3.4	0.0000	0.0000	OK
2160 minute summer	S3	1140	4.083	0.033	4.3	0.0093	0.0000	OK
2160 minute summer	9450	1140	2.656	0.032	4.3	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)
2160 minute summer	SW2	1.000	S21	3.4	1.002	0.041	0.0420	
2160 minute summer	S21	1.001	9452	3.4	1.017	0.041	0.0613	121.4
2160 minute summer	S3	1.000_1	9450	4.3	1.216	0.045	0.1513	152.7

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Results for 100 year +45% CC 2160 minute winter. 2400 minute analysis at 60 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
2160 minute winter	SW2	1140	3.256	0.026	2.3	0.0297	0.0000	OK
2160 minute winter	S21	1140	2.947	0.026	2.3	0.0074	0.0000	OK
2160 minute winter	9452	1140	2.489	0.026	2.3	0.0000	0.0000	OK
2160 minute winter	S3	1140	4.077	0.027	2.9	0.0077	0.0000	OK
2160 minute winter	9450	1140	2.651	0.027	2.9	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)
2160 minute winter	SW2	1.000	S21	2.3	0.895	0.028	0.0318	
2160 minute winter	S21	1.001	9452	2.3	0.906	0.028	0.0466	121.4
2160 minute winter	S3	1.000_1	9450	2.9	1.080	0.030	0.1148	152.3

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8.4 Appendix D – CCTV Survey

Eyes On Drainage Services Ltd
Merrion House, Partridge Green
Tel. 01403 710971
info@eyesondrainage.co.uk

Project

Project Name:	Marine Place - Worthing
Project Description:	CCTV Survey, Trace & Plot
Project Status:	Complete
Project Date:	15/10/2021
Inspection Standard:	MSCC5 Sewers & Drainage GB (SRM5 Scoring)

EYES ON DRAINAGE

SPECIALIST CCTV SURVEYING

Eyes On Drainage Services Ltd
Merrion House, Partridge Green
Tel. 01403 710971
info@eyesondrainage.co.uk

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Eyes On Drainage Services Ltd
Merrion House, Partridge Green
Tel. 01403 710971
info@eyesondrainage.co.uk

Project Information

Project Name	Project Number	Project Date
Marine Place - Worthing		15/10/2021

Client

Company: Craig Developments

Site

Department: Former Debenhams
Street: Marine Place
Town or City: Worthing
County: West Sussex
Post Code: BN11 3AA

Contractor

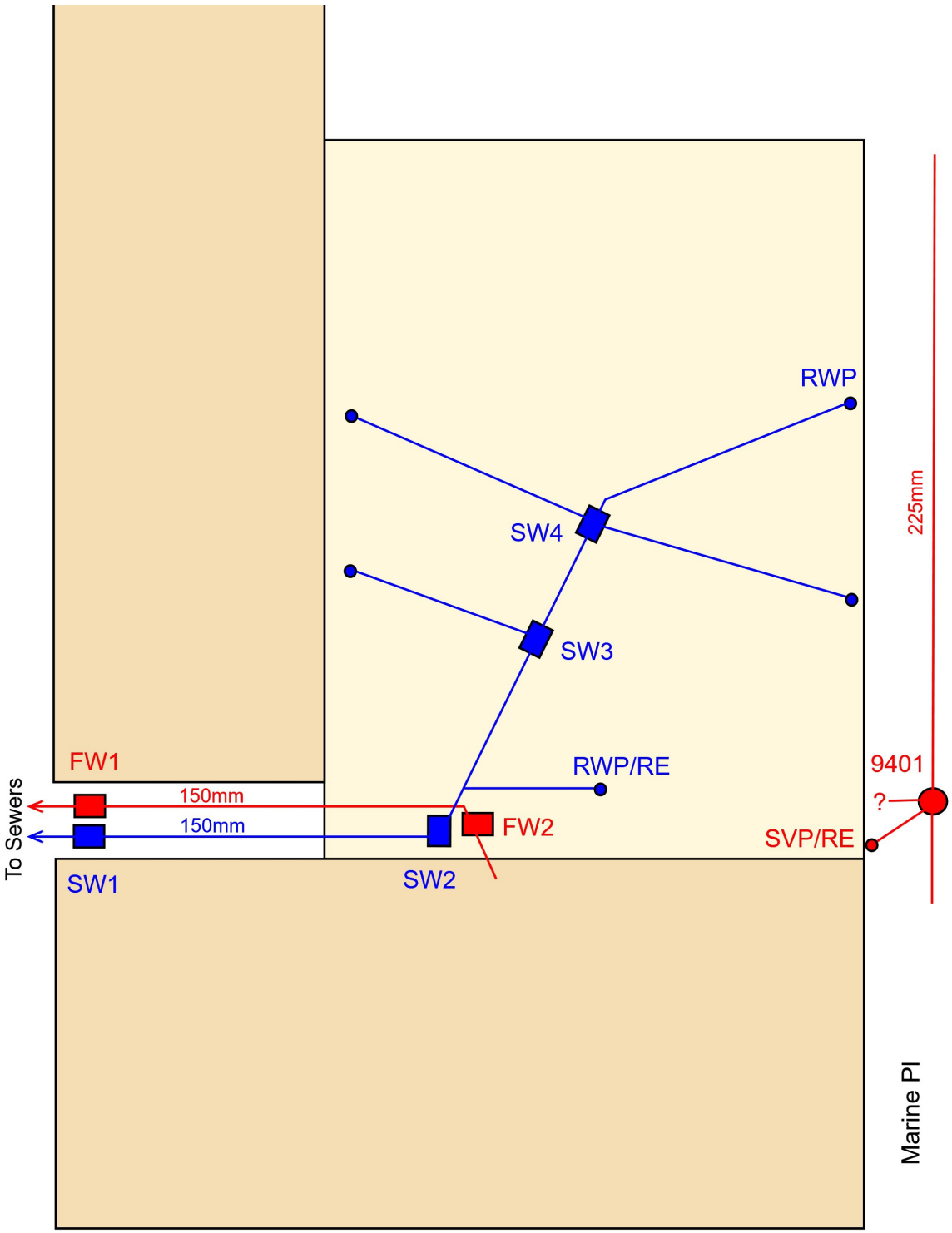
Company: Eyes On Drainage Services Ltd
Contact: Jay Young
Street: Merrion House
Town or City: Partridge Green
County: West Sussex
Post Code: RH13 8EH
Phone: 01403 710971
Mobile: 07711 184951
Email: info@eyesondrainage.co.uk

Eyes On Drainage Services Ltd
Merrion House, Partridge Green
Tel. 01403 710971
info@eyesondrainage.co.uk

Project Information

Project Name	Project Number	Project Date
Marine Place - Worthing		15/10/2021

Project Drawing, Page 'Marine Place - Worthing'



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Scoring Summary

Project Name	Project Number	Project Date
Marine Place - Worthing		15/10/2021

Structural Defects

Grade 3: Best practice suggests consideration should be given to repairs in the medium term.

Grade 4: Best practice suggests consideration should be given to repairs to avoid a potential collapse.

Grade 5: Best practice suggests that this pipe is at risk of collapse at any time. Urgent consideration should be given to repairs to avoid total failure.

Section	PLR	Grade	Description
2	FW2X	3	Fracture, circumferential at joint from 8 o'clock to 4 o'clock
3	FW1X	4	Fractures, multiple from 12 o'clock to 12 o'clock, finish
4	SW3X	3	Fracture, circumferential at joint from 9 o'clock to 3 o'clock
5	SW4X	3	Fracture, circumferential from 12 o'clock to 12 o'clock
9	RWP/REX	4	Fractures, multiple at joint from 11 o'clock to 1 o'clock
10	SVP/REX	4	Multiple defects

Service / Operational Condition

Grade 3: Best practice suggests consideration should be given to maintenance activities in the medium term.

Grade 4: Best practice suggests consideration should be given to maintenance activity to avoid potential blockages.

Grade 5: Best practice suggests that this pipe is at a high risk of backing up or causing flooding.

Section	PLR	Grade	Description
2	FW2X	3	Multiple defects
3	FW1X	5	Attached deposits, grease from 7 o'clock to 5 o'clock, 30% cross-sectional area loss
4	SW3X	4	Settled deposits, coarse, 20% cross-sectional area loss
8	SW1X	3	Joint displaced, medium
9	RWP/REX	3	Settled deposits, fine, 10% cross-sectional area loss, finish
10	SVP/REX	2	Multiple defects

Information

These scoring summaries are based on the SRM grading from the WRc.

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Section Profile

Project Name	Project Number	Project Date
Marine Place - Worthing		15/10/2021

Circular, 100 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Material	Total Length	Inspected Length
10	SVP/RE	9401	15/10/2021	Marine Place	Cast iron	4.10 m	4.10 m

Total: 1 Inspection x Circular 100 mm = 4.10 m Total Length and 4.10 m Inspected Length

Circular, 150 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Material	Total Length	Inspected Length
2	FW2	FW1	15/10/2021	Marine Place	Vitrified clay	17.50 m	17.50 m
3	FW1	Sewer	15/10/2021	Marine Place	Vitrified clay	9.70 m	9.70 m
4	SW3	SW2	15/10/2021	Marine Place	Vitrified clay	11.60 m	11.60 m
5	SW4	SW3	15/10/2021	Marine Place	Vitrified clay	6.90 m	6.90 m
6	RWP	SW4	15/10/2021	Marine Place	Vitrified clay	13.00 m	13.00 m
7	SW2	SW1	15/10/2021	Marine Place	Vitrified clay	13.10 m	13.10 m
8	SW1	Sewer	15/10/2021	Marine Place	Vitrified clay	13.90 m	13.90 m
9	RWP/RE	JN	15/10/2021	Marine Place	Cast iron	6.10 m	6.10 m

Total: 8 Inspections x Circular 150 mm = 91.80 m Total Length and 91.80 m Inspected Length

Circular, 225 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Material	Total Length	Inspected Length
1	A	0450	15/10/2021	Marine Place	Vitrified clay	0.30 m	0.30 m
11	9401	9403	15/10/2021	Marine Place	Vitrified clay	27.80 m	**27.40 m**

Total: 2 Inspections x Circular 225 mm = 28.10 m Total Length and 27.70 m Inspected Length

Total: 11 Inspections = 124.00 m Total Length and 123.60 m Inspected Length

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Section Summary

Project Name	Project Number	Project Date
Marine Place - Worthing		15/10/2021

Number of sections	11
Total length of sections	124.00 m
Total length of inspected sections	123.60 m
Total length of abandoned inspections	0.40 m
Number of abandoned inspections	1
Number of section inspection photos	64
Number of section inspection videos	11
Number of section inspection scans	0
Number of section inclination measurements	0

PLR:	AX	**Upstream Node:**	A
Inspection Direction:	Upstream	**Downstream Node:**	0450
Inspected Length:	0.30 m	**Dia/Height:**	225 mm
Total Length:	0.30 m	**Material:**	Vitrified clay

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: 0450
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.30	MHF	Finish node, manhole, reference: A

PLR:	FW2X	**Upstream Node:**	FW2
Inspection Direction:	Downstream	**Downstream Node:**	FW1
Inspected Length:	17.50 m	**Dia/Height:**	150 mm
Total Length:	17.50 m	**Material:**	Vitrified clay

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: FW2
2	0.00	WL	Water level, 5% of the vertical dimension
3	16.00	DEG	Attached deposits, grease from 4 o'clock to 8 o'clock, 10% cross-sectional area loss
4	16.20	WL	Water level, 10% of the vertical dimension
5	16.50	FCJ	Fracture, circumferential at joint from 8 o'clock to 4 o'clock
6	17.30	DER	Settled deposits, coarse, 15% cross-sectional area loss
7	17.50	MHF	Finish node, manhole, reference: FW1

PLR:	FW1X	**Upstream Node:**	FW1
Inspection Direction:	Downstream	**Downstream Node:**	Sewer
Inspected Length:	9.70 m	**Dia/Height:**	150 mm
Total Length:	9.70 m	**Material:**	Vitrified clay

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: FW1

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Section Summary

Project Name	Project Number	Project Date
Marine Place - Worthing		15/10/2021

No.	m+	Code	Observation
2	0.00	WL	Water level, 0% of the vertical dimension
3	3.10	JN	Junction at 12 o'clock, 150mm dia
4	3.60	LR	Line deviates right
5	3.60	JDM	Joint displaced, medium
6	4.20	FM	Fractures, multiple from 12 o'clock to 12 o'clock, start
7	4.40	FM	Fractures, multiple from 12 o'clock to 12 o'clock, finish
8	9.10	LD	Line deviates down
9	9.60	DEG	Attached deposits, grease from 7 o'clock to 5 o'clock, 30% cross-sectional area loss
10	9.70	BRF	Finish node, major connection without manhole, reference: Sewer

PLR:	SW3X	**Upstream Node:**	SW3
Inspection Direction:	Upstream	**Downstream Node:**	SW2
Inspected Length:	11.60 m	**Dia/Height:**	150 mm
Total Length:	11.60 m	**Material:**	Vitrified clay

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: SW2
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.50	FCJ	Fracture, circumferential at joint from 9 o'clock to 3 o'clock
4	2.00	JN	Junction at 3 o'clock, 150mm dia
5	9.90	DER	Settled deposits, coarse, 20% cross-sectional area loss
6	10.00	DES	Settled deposits, fine, 10% cross-sectional area loss, start
7	11.60	DES	Settled deposits, fine, 10% cross-sectional area loss, finish
8	11.60	MHF	Finish node, manhole, reference: SW3

PLR:	SW4X	**Upstream Node:**	SW4
Inspection Direction:	Upstream	**Downstream Node:**	SW3
Inspected Length:	6.90 m	**Dia/Height:**	150 mm
Total Length:	6.90 m	**Material:**	Vitrified clay

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: SW3
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.10	FC	Fracture, circumferential from 12 o'clock to 12 o'clock
4	6.60	OJM	Open joint, medium
5	6.90	MHF	Finish node, manhole, reference: SW4

PLR:	RWPX	**Upstream Node:**	RWP
Inspection Direction:	Upstream	**Downstream Node:**	SW4
Inspected Length:	13.00 m	**Dia/Height:**	150 mm
Total Length:	13.00 m	**Material:**	Vitrified clay

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: SW4
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.10	LR	Line deviates right
4	12.70	MCCI	Pipe material changes to cast iron at this point
5	13.00	MHF	Finish node, manhole, reference: RWP

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Section Summary

Project Name	Project Number	Project Date
Marine Place - Worthing		15/10/2021

PLR:	SW2X	**Upstream Node:**	SW2
Inspection Direction:	Downstream	**Downstream Node:**	SW1
Inspected Length:	13.10 m	**Dia/Height:**	150 mm
Total Length:	13.10 m	**Material:**	Vitrified clay

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: SW2
2	0.00	WL	Water level, 0% of the vertical dimension
3	13.10	MHF	Finish node, manhole, reference: SW1

PLR:	SW1X	**Upstream Node:**	SW1
Inspection Direction:	Downstream	**Downstream Node:**	Sewer
Inspected Length:	13.90 m	**Dia/Height:**	150 mm
Total Length:	13.90 m	**Material:**	Vitrified clay

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: SW1
2	0.00	WL	Water level, 0% of the vertical dimension
3	11.80	WL	Water level, 10% of the vertical dimension
4	13.70	JDM	Joint displaced, medium
5	13.90	BRF	Finish node, major connection without manhole, reference: Sewer

PLR:	RWP/REX	**Upstream Node:**	RWP/RE
Inspection Direction:	Downstream	**Downstream Node:**	JN
Inspected Length:	6.10 m	**Dia/Height:**	150 mm
Total Length:	6.10 m	**Material:**	Cast iron

No.	m+	Code	Observation
1	0.00	RE	Start node, rodding eye, reference: RWP/RE
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.70	DES	Settled deposits, fine, 10% cross-sectional area loss, start
4	2.40	DES	Settled deposits, fine, 10% cross-sectional area loss, finish
5	3.80	FMJ	Fractures, multiple at joint from 11 o'clock to 1 o'clock
6	3.80	FL	Fracture, longitudinal at 12 o'clock, start
7	3.90	FL	Fracture, longitudinal at 9 o'clock, start
8	4.10	FL	Fracture, longitudinal at 9 o'clock, finish
9	4.30	FL	Fracture, longitudinal at 12 o'clock, finish
10	6.10	BRF	Finish node, major connection without manhole, reference: JN

PLR:	SVP/REX	**Upstream Node:**	SVP/RE
Inspection Direction:	Downstream	**Downstream Node:**	9401
Inspected Length:	4.10 m	**Dia/Height:**	100 mm
Total Length:	4.10 m	**Material:**	Cast iron

No.	m+	Code	Observation
1	0.00	RE	Start node, rodding eye, reference: SVP/RE
2	0.00	WL	Water level, 0% of the vertical dimension
3	0.60	MCVC	Pipe material changes to vitrified clay at this point
4	0.90	REM	General remark
5	1.90	FMJ	Fractures, multiple at joint from 9 o'clock to 2 o'clock, start

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Section Summary

Project Name	Project Number	Project Date
Marine Place - Worthing		15/10/2021

No.	m+	Code	Observation
6	2.00	FMJ	Fractures, multiple at joint from 9 o'clock to 2 o'clock, finish
7	2.00	FL	Fracture, longitudinal at 3 o'clock, start
8	2.00	FL	Fracture, longitudinal at 8 o'clock, start
9	2.00	FL	Fracture, longitudinal at 11 o'clock, start
10	2.50	FC	Fracture, circumferential from 12 o'clock to 12 o'clock
11	2.80	FS	Fracture, spiral from 12 o'clock to 12 o'clock, start
12	2.80	FL	Fracture, longitudinal at 11 o'clock, finish
13	3.20	GP	General photograph taken at this point
14	3.40	FL	Fracture, longitudinal at 3 o'clock, finish
15	3.40	FL	Fracture, longitudinal at 8 o'clock, finish
16	3.40	FS	Fracture, spiral from 12 o'clock to 12 o'clock, finish
17	3.60	LR	Line deviates right
18	3.70	OJM	Open joint, medium
19	4.10	MHF	Finish node, manhole, reference: 9401

PLR:	9401X	**Upstream Node:**	9401
Inspection Direction:	Downstream	**Downstream Node:**	9403
Inspected Length:	27.40 m	**Dia/Height:**	225 mm
Total Length:	27.80 m	**Material:**	Vitrified clay

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: 9401
2	0.00	WL	Water level, 0% of the vertical dimension
3	10.00	JN	Junction at 12 o'clock, 225mm dia
4	11.60	JN	Junction at 2 o'clock, 150mm dia
5	21.70	JN	Junction at 10 o'clock, 150mm dia
6	25.60	JN	Junction at 2 o'clock, 150mm dia
7	27.40	JN	Junction at 1 o'clock, 150mm dia
8	27.40	SA	Survey abandoned

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Section Inspection - 15/10/2021 - AX

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
1	1	15/10/21	9:08	Not Specified	No Rain Or Snow	No	AX

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
JY	BV21 CDX	Pearpoint P540	Not Specified	Public Sewer	Not Specified

Town or Village:	Worthing	**Inspection Direction:**	Upstream	**Upstream Node:**	A
Road:	Marine Place	**Inspected Length:**	0.30 m	**Upstream Pipe Depth:**	
Location:	Road	**Total Length:**	0.30 m	**Downstream Node:**	0450
Surface Type:	Asphalt Highway	**Joint Length:**		**Downstream Pipe Depth:**	2.300 m

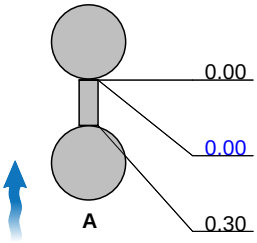
Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	225 mm
Flow Control:	No flow control	**Material:**	Vitrified clay
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50 **Position [m]** **Code** **Observation** **Grade**

Depth: 2.30 m

0450



Position [m]	Code	Observation	Grade
0.00	MH	Start node, manhole, reference: 0450	
0.00	WL	Water level, 0% of the vertical dimension	
0.30	MHF	Finish node, manhole, reference: A: Capped, redundant. Chamber 0453 not located	

Depth: m

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

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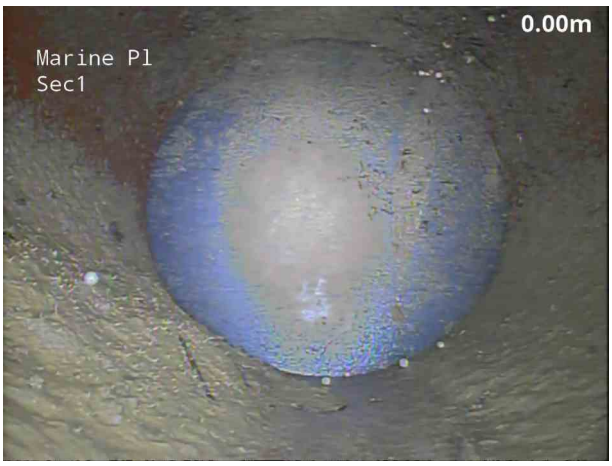
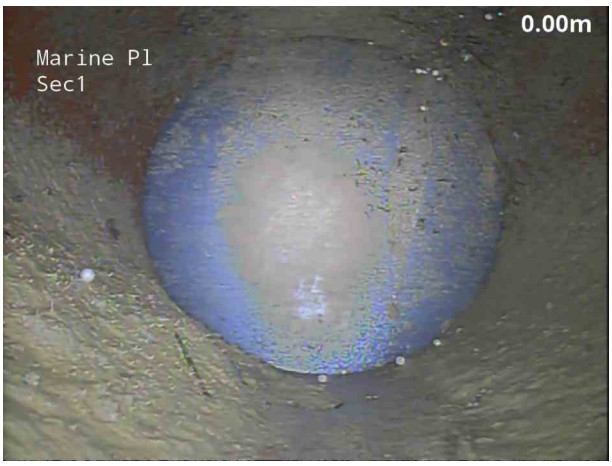
Section Pictures - 15/10/2021 - AX

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
1	Upstream	AX		



1, 00:00:01, 0.00 m
Water level, 0% of the vertical dimension



2, 00:00:09, 0.30 m
Finish node, manhole, reference: A, Capped, redundant.
Chamber 0453 not located

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Section Inspection - 15/10/2021 - FW2X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
2	1	15/10/21	9:42	Not Specified	No Rain Or Snow	No	FW2X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
JY	BV21 CDX	Pearpoint P540	Not Specified	Private Drain	Not Specified

Town or Village:	Worthing	**Inspection Direction:**	Downstream	**Upstream Node:**	FW2
Road:	Marine Place	**Inspected Length:**	17.50 m	**Upstream Pipe Depth:**	1.620 m
Location:	Road	**Total Length:**	17.50 m	**Downstream Node:**	FW1
Surface Type:	Asphalt	**Joint Length:**		**Downstream Pipe Depth:**	

Use:	Foul	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	150 mm
Flow Control:	No flow control	**Material:**	Vitrified clay
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:151 **Position [m]**

Depth: 1.62 m
FW2



FW1
Depth: m

Position [m]	Code	Observation	Grade
0.00	MH	Start node, manhole, reference: FW2	
0.00	WL	Water level, 5% of the vertical dimension: Live	
16.00	DEG	Attached deposits, grease from 4 o'clock to 8 o'clock, 10% cross-sectional area loss	3
16.20	WL	Water level, 10% of the vertical dimension	
16.50	FCJ	Fracture, circumferential at joint from 8 o'clock to 4 o'clock	3 / 2
17.30	DER	Settled deposits, coarse, 15% cross-sectional area loss	3
17.50	MHF	Finish node, manhole, reference: FW1	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
1	40.0	0.0	40.0	3.0	3	4.0	0.0	7.0	3.0

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Section Pictures - 15/10/2021 - FW2X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
2	Downstream	FW2X		



1, 00:00:02, 0.00 m
Water level, 5% of the vertical dimension, Live



2, 00:01:52, 16.00 m
Attached deposits, grease from 4 o'clock to 8 o'clock, 10% cross-sectional area loss



3, 00:01:55, 16.20 m
Water level, 10% of the vertical dimension



4, 00:01:59, 16.50 m
Fracture, circumferential at joint from 8 o'clock to 4 o'clock



5, 00:02:11, 17.30 m
Settled deposits, coarse, 15% cross-sectional area loss



6, 00:02:25, 17.50 m
Finish node, manhole, reference: FW1

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Section Inspection - 15/10/2021 - FW1X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
3	1	15/10/21	9:43	Not Specified	No Rain Or Snow	No	FW1X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
JY	BV21 CDX	Pearpoint P540	Not Specified	Private Drain	Not Specified

Town or Village:	Worthing	**Inspection Direction:**	Downstream	**Upstream Node:**	FW1
Road:	Marine Place	**Inspected Length:**	9.70 m	**Upstream Pipe Depth:**	
Location:	Road	**Total Length:**	9.70 m	**Downstream Node:**	SEWER
Surface Type:	Asphalt	**Joint Length:**		**Downstream Pipe Depth:**	

Use:	Foul	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	150 mm
Flow Control:	No flow control	**Material:**	Vitrified clay
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:



Scale: 1:84 Position [m]		Code	Observation	Grade
Depth: m FW1				
0.00		MH	Start node, manhole, reference: FW1	
0.00		WL	Water level, 0% of the vertical dimension	
3.10		JN	Junction at 12 o'clock, 150mm dia	
3.60		LR	Line deviates right	
3.60		JDM	Joint displaced, medium	1 / 3
4.20	S01	FM	Fractures, multiple from 12 o'clock to 12 o'clock, start	
4.40	F01	FM	Fractures, multiple from 12 o'clock to 12 o'clock, finish	4 / 2
9.10		LD	Line deviates down	
9.60		DEG	Attached deposits, grease from 7 o'clock to 5 o'clock, 30% cross-sectional area loss	5
9.70		BRF	Finish node, major connection without manhole, reference: Sewer	
Sewer Depth: m				

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
2	80.0	0.0	81.0	4.0	3	10.0	0.0	13.0	5.0

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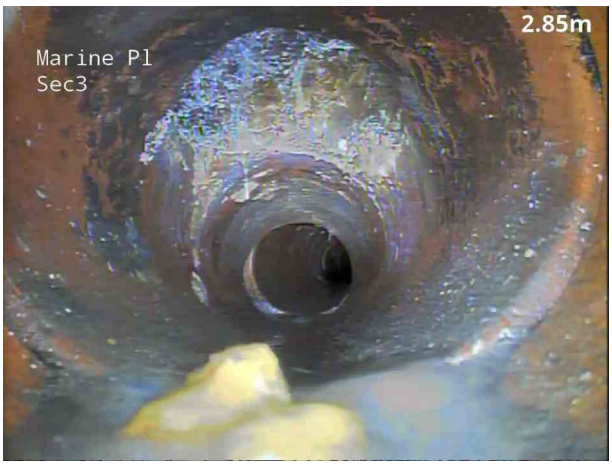
Section Pictures - 15/10/2021 - FW1X

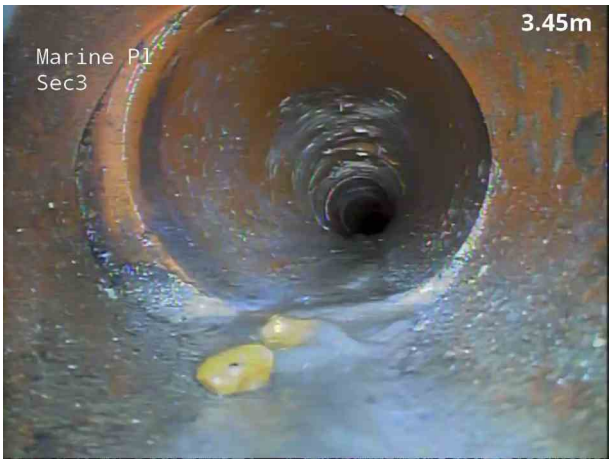
Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
3	Downstream	FW1X		



1, 00:00:01, 0.00 m
Water level, 0% of the vertical dimension



2, 00:00:11, 3.10 m
Junction at 12 o'clock, 150mm dia



3, 00:00:16, 3.60 m
Line deviates right



4, 00:00:16, 3.60 m
Joint displaced, medium



5, 00:00:23, 4.20 m
Fractures, multiple from 12 o'clock to 12 o'clock, start



6, 00:00:23, 4.20 m
Fractures, multiple from 12 o'clock to 12 o'clock, start

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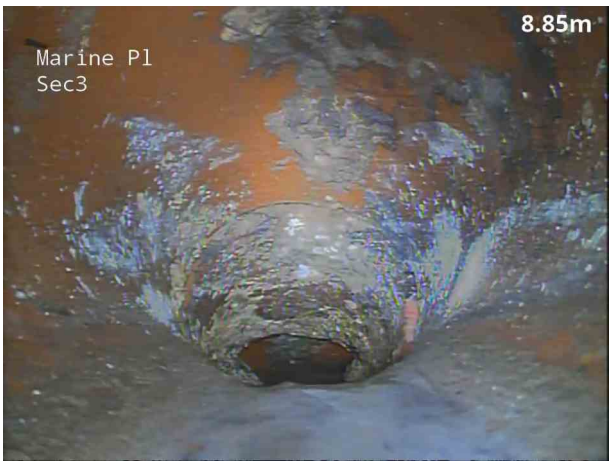
Section Pictures - 15/10/2021 - FW1X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
3	Downstream	FW1X		



7, 00:01:05, 9.10 m
Line deviates down



8, 00:01:10, 9.60 m
Attached deposits, grease from 7 o'clock to 5 o'clock, 30% cross-sectional area loss



9, 00:01:14, 9.70 m
Finish node, major connection without manhole, reference: Sewer

Eyes On Drainage Services Ltd
Merrion House, Partridge Green
Tel. 01403 710971
info@eyesondrainage.co.uk

Section Inspection - 15/10/2021 - SW3X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
4	1	15/10/21	9:50	Not Specified	No Rain Or Snow	No	SW3X

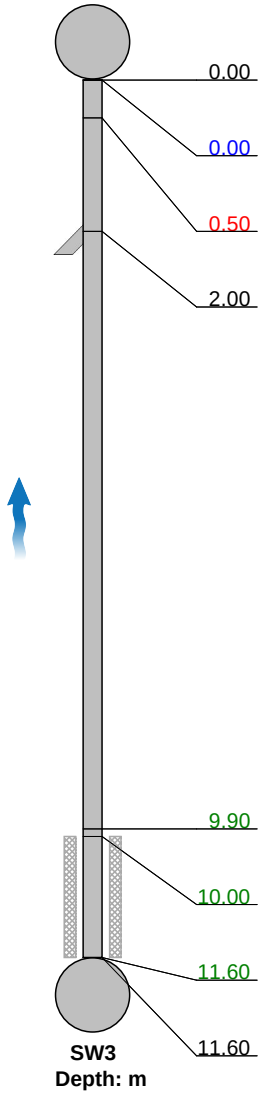
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
JY	BV21 CDX	Pearpoint P540	Not Specified	Private Drain	Not Specified

Town or Village:	Worthing	**Inspection Direction:**	Upstream	**Upstream Node:**	SW3
Road:	Marine Place	**Inspected Length:**	11.60 m	**Upstream Pipe Depth:**	
Location:	Road	**Total Length:**	11.60 m	**Downstream Node:**	SW2
Surface Type:	Asphalt	**Joint Length:**		**Downstream Pipe Depth:**	1.400 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	150 mm
Flow Control:	No flow control	**Material:**	Vitrified clay
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:100 **Position [m]**



Position [m]		Code	Observation	Grade
0.00		MH	Start node, manhole, reference: SW2	
0.00		WL	Water level, 0% of the vertical dimension	
0.50		FCJ	Fracture, circumferential at joint from 9 o'clock to 3 o'clock	3 / 2
2.00		JN	Junction at 3 o'clock, 150mm dia	
9.90		DER	Settled deposits, coarse, 20% cross-sectional area loss	4
10.00	S01	DES	Settled deposits, fine, 10% cross-sectional area loss, start	
11.60	F01	DES	Settled deposits, fine, 10% cross-sectional area loss, finish	3
11.60		MHF	Finish node, manhole, reference: SW3	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
1	40.0	0.0	40.0	3.0	3	7.0	0.0	10.0	4.0

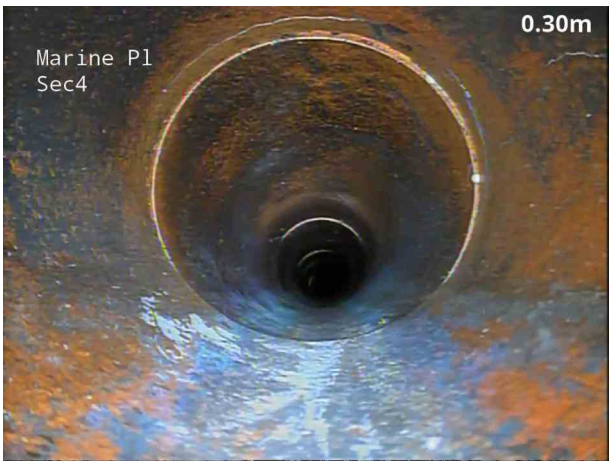
Eyes On Drainage Services Ltd
Merrion House, Partridge Green
Tel. 01403 710971
info@eyesondrainage.co.uk

Section Pictures - 15/10/2021 - SW3X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
4	Upstream	SW3X		



1, 00:00:01, 0.00 m
Water level, 0% of the vertical dimension



2, 00:00:14, 0.50 m
Fracture, circumferential at joint from 9 o'clock to 3 o'clock



3, 00:00:19, 2.00 m
Junction at 3 o'clock, 150mm dia



4, 00:00:42, 9.90 m
Settled deposits, coarse, 20% cross-sectional area loss



5, 00:00:47, 10.00 m
Settled deposits, fine, 10% cross-sectional area loss, start



6, 00:00:53, 11.60 m
Finish node, manhole, reference: SW3

Eyes On Drainage Services Ltd
Merrion House, Partridge Green
Tel. 01403 710971
info@eyesondrainage.co.uk

Section Inspection - 15/10/2021 - SW4X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
5	1	15/10/21	9:51	Not Specified	No Rain Or Snow	No	SW4X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
JY	BV21 CDX	Pearpoint P540	Not Specified	Private Drain	Not Specified

Town or Village:	Worthing	**Inspection Direction:**	Upstream	**Upstream Node:**	SW4
Road:	Marine Place	**Inspected Length:**	6.90 m	**Upstream Pipe Depth:**	
Location:	Road	**Total Length:**	6.90 m	**Downstream Node:**	SW3
Surface Type:	Asphalt	**Joint Length:**		**Downstream Pipe Depth:**	

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	150 mm
Flow Control:	No flow control	**Material:**	Vitrified clay
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:60



Position [m]	Code	Observation	Grade
0.00	MH	Start node, manhole, reference: SW3	
0.00	WL	Water level, 0% of the vertical dimension	
0.10	FC	Fracture, circumferential from 12 o'clock to 12 o'clock	3 / 2
6.60	OJM	Open joint, medium	1
6.90	MHF	Finish node, manhole, reference: SW4	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
2	40.0	0.0	41.0	3.0	1	1.0	0.0	1.0	2.0

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Merrion House, Partridge Green
Tel. 01403 710971
info@eyesondrainage.co.uk

Section Pictures - 15/10/2021 - SW4X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
5	Upstream	SW4X		



1, 00:00:01, 0.00 m
Water level, 0% of the vertical dimension



2, 00:00:04, 0.10 m
Fracture, circumferential from 12 o'clock to 12 o'clock



3, 00:00:29, 6.60 m
Open joint, medium



4, 00:00:36, 6.90 m
Finish node, manhole, reference: SW4

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Merrion House, Partridge Green
Tel. 01403 710971
info@eyesondrainage.co.uk

Section Inspection - 15/10/2021 - RWPX

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
6	1	15/10/21	9:55	Not Specified	No Rain Or Snow	No	RWPX

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
JY	BV21 CDX	Pearpoint P540	Not Specified	Private Drain	Not Specified

Town or Village:	Worthing	**Inspection Direction:**	Upstream	**Upstream Node:**	RWP
Road:	Marine Place	**Inspected Length:**	13.00 m	**Upstream Pipe Depth:**	
Location:	Road	**Total Length:**	13.00 m	**Downstream Node:**	SW4
Surface Type:	Asphalt	**Joint Length:**		**Downstream Pipe Depth:**	

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	150 mm
Flow Control:	No flow control	**Material:**	Vitrified clay
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:113



Position [m]	Code	Observation	Grade
0.00	MH	Start node, manhole, reference: SW4	
0.00	WL	Water level, 0% of the vertical dimension	
0.10	LR	Line deviates right	
12.70	MCCI	Pipe material changes to cast iron at this point	
13.00	MHF	Finish node, manhole, reference: RWP: Blocked	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

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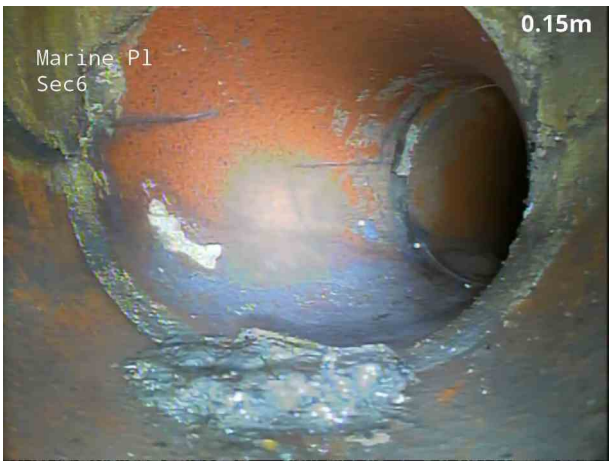
Tel. 01403 710971
info@eyesondrainage.co.uk

Section Pictures - 15/10/2021 - RWPX

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
6	Upstream	RWPX		



1, 00:01:05, 0.00 m
Water level, 0% of the vertical dimension



2, 00:00:15, 12.70 m
Pipe material changes to cast iron at this point



3, 00:00:04, 13.00 m
Finish node, manhole, reference: RWP, Blocked



4, 00:00:04, 13.00 m
Finish node, manhole, reference: RWP, Blocked

Eyes On Drainage Services Ltd
Merrion House, Partridge Green
Tel. 01403 710971
info@eyesondrainage.co.uk

Section Inspection - 15/10/2021 - SW2X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
7	1	15/10/21	9:58	Not Specified	No Rain Or Snow	No	SW2X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
JY	BV21 CDX	Pearpoint P540	Not Specified	Private Drain	Not Specified

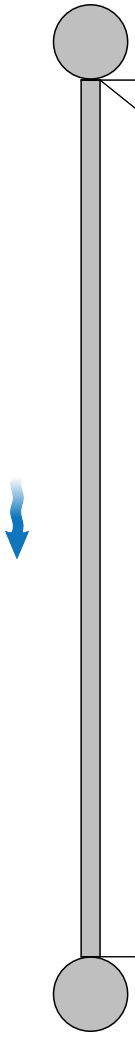
Town or Village:	Worthing	**Inspection Direction:**	Downstream	**Upstream Node:**	SW2
Road:	Marine Place	**Inspected Length:**	13.10 m	**Upstream Pipe Depth:**	1.400 m
Location:	Road	**Total Length:**	13.10 m	**Downstream Node:**	SW1
Surface Type:	Asphalt	**Joint Length:**		**Downstream Pipe Depth:**	

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	150 mm
Flow Control:	No flow control	**Material:**	Vitrified clay
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: **1:113** **Position [m]** **Code** **Observation** **Grade**

Depth: 1.40 m
SW2



Position [m]	Code	Observation	Grade
0.00	MH	Start node, manhole, reference: SW2	
0.00	WL	Water level, 0% of the vertical dimension	
13.10	MHF	Finish node, manhole, reference: SW1	

SW1
Depth: m

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

Eyes On Drainage Services Ltd
Merrion House, Partridge Green
Tel. 01403 710971
info@eyesondrainage.co.uk

Section Pictures - 15/10/2021 - SW2X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
7	Downstream	SW2X		



1, 00:00:02, 0.00 m
Water level, 0% of the vertical dimension



2, 00:00:38, 13.10 m
Finish node, manhole, reference: SW1

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Tel. 01403 710971
info@eyesondrainage.co.uk

Section Inspection - 15/10/2021 - SW1X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
8	1	15/10/21	10:04	Not Specified	No Rain Or Snow	No	SW1X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
JY	BV21 CDX	Pearpoint P540	Not Specified	Private Drain	Not Specified

Town or Village:	Worthing	**Inspection Direction:**	Downstream	**Upstream Node:**	SW1
Road:	Marine Place	**Inspected Length:**	13.90 m	**Upstream Pipe Depth:**	
Location:	Road	**Total Length:**	13.90 m	**Downstream Node:**	SEWER
Surface Type:	Asphalt	**Joint Length:**		**Downstream Pipe Depth:**	

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	150 mm
Flow Control:	No flow control	**Material:**	Vitrified clay
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:120



Position [m]	Code	Observation	Grade
0.00	MH	Start node, manhole, reference: SW1	
0.00	WL	Water level, 0% of the vertical dimension	
11.80	WL	Water level, 10% of the vertical dimension	
13.70	JDM	Joint displaced, medium	1 / 3
13.90	BRF	Finish node, major connection without manhole, reference: Sewer	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
1	1.0	0.0	1.0	1.0	1	2.0	0.0	2.0	3.0

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Merrion House, Partridge Green
Tel. 01403 710971
info@eyesondrainage.co.uk

Section Pictures - 15/10/2021 - SW1X

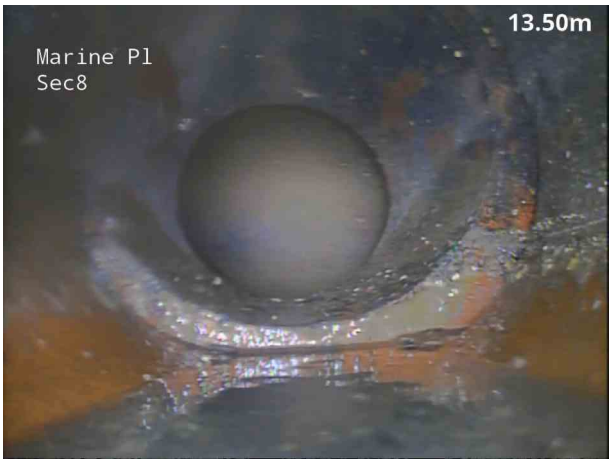
Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
8	Downstream	SW1X		



1, 00:00:03, 0.00 m
Water level, 0% of the vertical dimension



2, 00:00:40, 11.80 m
Water level, 10% of the vertical dimension



3, 00:01:51, 13.70 m
Joint displaced, medium



4, 00:01:43, 13.90 m
Finish node, major connection without manhole, reference: Sewer

Eyes On Drainage Services Ltd
Merrion House, Partridge Green
Tel. 01403 710971
info@eyesondrainage.co.uk

Section Inspection - 15/10/2021 - RWP/REX

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
9	1	15/10/21	10:19	Not Specified	No Rain Or Snow	No	RWP/REX

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
JY	BV21 CDX	Pearpoint P540	Not Specified	Private Drain	Not Specified

Town or Village:	Worthing	**Inspection Direction:**	Downstream	**Upstream Node:**	RWP/RE
Road:	Marine Place	**Inspected Length:**	6.10 m	**Upstream Pipe Depth:**	
Location:	Footway	**Total Length:**	6.10 m	**Downstream Node:**	JN
Surface Type:	Asphalt	**Joint Length:**		**Downstream Pipe Depth:**	

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	150 mm
Flow Control:	No flow control	**Material:**	Cast iron
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:53



Position [m]		Code	Observation	Grade
Depth: m RWP/RE				
0.00		RE	Start node, rodding eye, reference: RWP/RE	
0.00		WL	Water level, 0% of the vertical dimension	
0.70	S01	DES	Settled deposits, fine, 10% cross-sectional area loss, start	
2.40	F01	DES	Settled deposits, fine, 10% cross-sectional area loss, finish	3
3.80		FMJ	Fractures, multiple at joint from 11 o'clock to 1 o'clock	4 / 2
3.80	S02	FL	Fracture, longitudinal at 12 o'clock, start	
3.90	S03	FL	Fracture, longitudinal at 9 o'clock, start	
4.10	F03	FL	Fracture, longitudinal at 9 o'clock, finish	3 / 2
4.30	F02	FL	Fracture, longitudinal at 12 o'clock, finish	3 / 2
6.10		BRF	Finish node, major connection without manhole, reference: JN	
JN Depth: m				

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
3	120.0	0.0	160.0	4.0	4	2.0	0.0	7.0	3.0

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Merrion House, Partridge Green
Tel. 01403 710971
info@eyesondrainage.co.uk

Section Pictures - 15/10/2021 - RWP/REX

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
9	Downstream	RWP/REX		



1, 00:00:02, 0.00 m
Water level, 0% of the vertical dimension



2, 00:00:08, 0.70 m
Settled deposits, fine, 10% cross-sectional area loss, start



3, 00:00:15, 2.40 m
Settled deposits, fine, 10% cross-sectional area loss, finish



4, 00:00:21, 3.80 m
Fractures, multiple at joint from 11 o'clock to 1 o'clock



5, 00:00:27, 3.90 m
Fracture, longitudinal at 9 o'clock, start



6, 00:00:29, 4.10 m
Fracture, longitudinal at 9 o'clock, finish

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Merrion House, Partridge Green
Tel. 01403 710971
info@eyesondrainage.co.uk

Section Pictures - 15/10/2021 - RWP/REX

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
9	Downstream	RWP/REX		



7, 00:00:35, 6.10 m
Finish node, major connection without manhole, reference: JN

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Tel. 01403 710971
info@eyesondrainage.co.uk

Section Inspection - 15/10/2021 - SVP/REX

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
10	1	15/10/21	10:32	Not Specified	No Rain Or Snow	No	SVP/REX

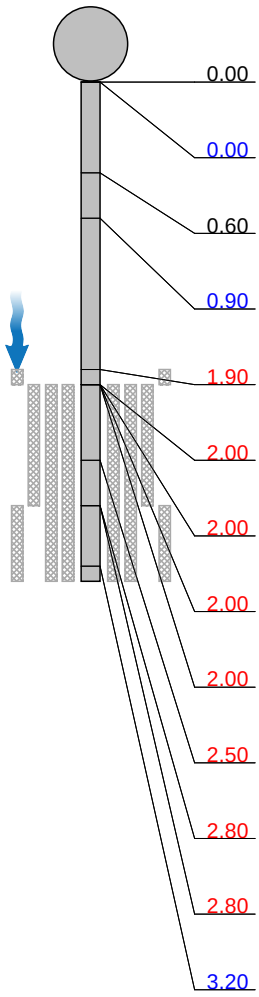
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
JY	BV21 CDX	Pearpoint P540	Not Specified	Private Drain	Not Specified

Town or Village:	Worthing	**Inspection Direction:**	Downstream	**Upstream Node:**	SVP/RE
Road:	Marine Place	**Inspected Length:**	4.10 m	**Upstream Pipe Depth:**	
Location:	Footway	**Total Length:**	4.10 m	**Downstream Node:**	9401
Surface Type:	Asphalt Footway	**Joint Length:**		**Downstream Pipe Depth:**	

Use:	Foul	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	100 mm
Flow Control:	No flow control	**Material:**	Cast iron
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50



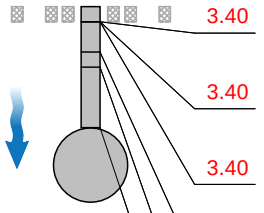
Position [m]		Code	Observation	Grade
0.00		RE	Start node, rodding eye, reference: SVP/RE	
0.00		WL	Water level, 0% of the vertical dimension	
0.60		MCVC	Pipe material changes to vitrified clay at this point	
0.90		REM	General remark: Rest bend	
1.90	S01	FMJ	Fractures, multiple at joint from 9 o'clock to 2 o'clock, start	
2.00	F01	FMJ	Fractures, multiple at joint from 9 o'clock to 2 o'clock, finish	4 / 2
2.00	S02	FL	Fracture, longitudinal at 3 o'clock, start	
2.00	S03	FL	Fracture, longitudinal at 8 o'clock, start	
2.00	S04	FL	Fracture, longitudinal at 11 o'clock, start	
2.50		FC	Fracture, circumferential from 12 o'clock to 12 o'clock	3 / 2
2.80	S05	FS	Fracture, spiral from 12 o'clock to 12 o'clock, start	
2.80	F04	FL	Fracture, longitudinal at 11 o'clock, finish	3 / 2
3.20		GP	General photograph taken at this point	

Eyes On Drainage Services Ltd
Merrion House, Partridge Green
Tel. 01403 710971
info@eyesondrainage.co.uk

Section Inspection - 15/10/2021 - SVP/REX

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
10	1	15/10/21	10:32	Not Specified	No Rain Or Snow	No	SVP/REX

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
JY	BV21 CDX	Pearpoint P540	Not Specified	Private Drain	Not Specified



Scale: 1:50 Position [m]		Code	Observation	Grade
3.40	F02	FL	Fracture, longitudinal at 3 o'clock, finish	3 / 2
3.40	F03	FL	Fracture, longitudinal at 8 o'clock, finish	3 / 2
3.40	F05	FS	Fracture, spiral from 12 o'clock to 12 o'clock, finish	4 / 2
3.60		LR	Line deviates right	
3.70		OJM	Open joint, medium	1
4.10		MHF	Finish node, manhole, reference: 9401	

Depth: m

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
7	280.0	0.0	401.0	4.0	6	5.0	0.0	8.0	4.0

Eyes On Drainage Services Ltd
Merrion House, Partridge Green
Tel. 01403 710971
info@eyesondrainage.co.uk

Section Pictures - 15/10/2021 - SVP/REX

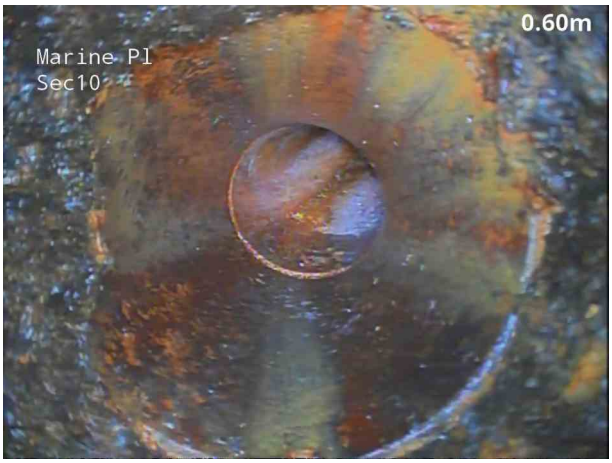
Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
10	Downstream	SVP/REX		



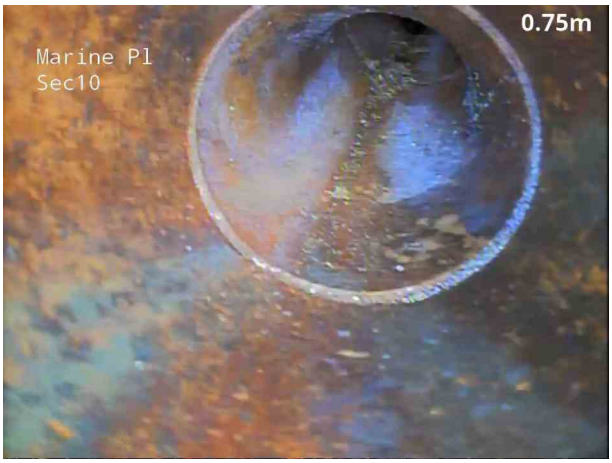
1, 00:00:00, 0.00 m
Start node, rodding eye, reference: SVP/RE



2, 00:00:15, 0.00 m
Water level, 0% of the vertical dimension



3, 00:00:21, 0.60 m
Pipe material changes to vitrified clay at this point



4, 00:00:26, 0.90 m
General remark, Rest bend



5, 00:00:33, 1.90 m
Fractures, multiple at joint from 9 o'clock to 2 o'clock, start



6, 00:00:37, 2.00 m
Fracture, longitudinal at 3 o'clock, start

Eyes On Drainage Services Ltd
Merrion House, Partridge Green
Tel. 01403 710971
info@eyesondrainage.co.uk

Section Pictures - 15/10/2021 - SVP/REX

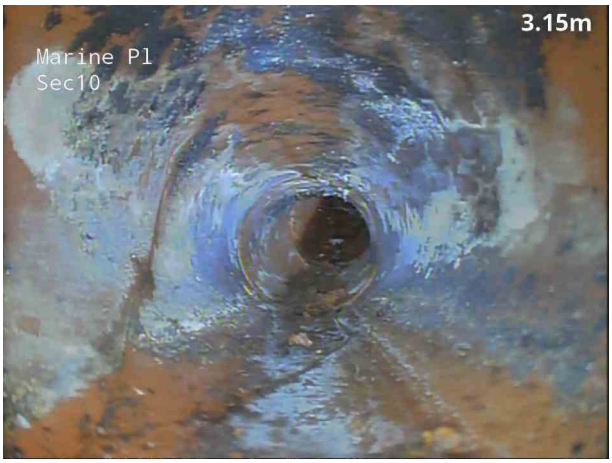
Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
10	Downstream	SVP/REX		



7, 00:00:41, 2.50 m
Fracture, circumferential from 12 o'clock to 12 o'clock



8, 00:00:48, 2.80 m
Fracture, spiral from 12 o'clock to 12 o'clock, start



9, 00:00:55, 3.20 m
General photograph taken at this point



10, 00:00:57, 3.40 m
Fracture, longitudinal at 3 o'clock, finish



11, 00:01:04, 3.70 m
Open joint, medium



12, 00:01:04, 3.70 m
Open joint, medium

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Section Pictures - 15/10/2021 - SVP/REX

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
10	Downstream	SVP/REX		



13, 00:01:21, 4.10 m
Finish node, manhole, reference: 9401

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Section Inspection - 15/10/2021 - 9401X

Item No.	Insp. No.	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
11	1	15/10/21	10:42	Not Specified	No Rain Or Snow	No	9401X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
JY	BV21 CDX	Pearpoint P540	Not Specified	Public Sewer	Not Specified

Town or Village:	Worthing	**Inspection Direction:**	Downstream	**Upstream Node:**	9401
Road:	Marine Place	**Inspected Length:**	27.40 m	**Upstream Pipe Depth:**	
Location:	Road	**Total Length:**	27.80 m	**Downstream Node:**	9403
Surface Type:	Asphalt Highway	**Joint Length:**		**Downstream Pipe Depth:**	

Use:	Foul	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	225 mm
Flow Control:	No flow control	**Material:**	Vitrified clay
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Routine inspection	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:240



Depth: m	Position [m]	Code	Observation	Grade
9401				
	0.00	MH	Start node, manhole, reference: 9401	
	0.00	WL	Water level, 0% of the vertical dimension	
	10.00	JN	Junction at 12 o'clock, 225mm dia	
	11.60	JN	Junction at 2 o'clock, 150mm dia	
	21.70	JN	Junction at 10 o'clock, 150mm dia	
	25.60	JN	Junction at 2 o'clock, 150mm dia	
	27.40	JN	Junction at 1 o'clock, 150mm dia	
	27.40	SA	Survey abandoned: Unable to continue	
9403	27.80		End of pipe	
Depth: m				

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

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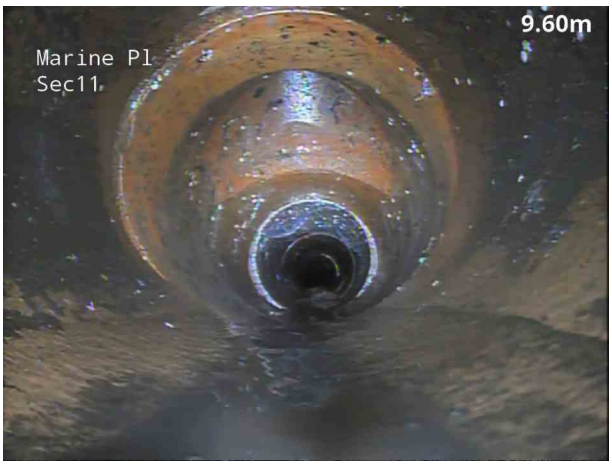
Section Pictures - 15/10/2021 - 9401X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
11	Downstream	9401X		



1, 00:00:01, 0.00 m
Water level, 0% of the vertical dimension



2, 00:00:40, 10.00 m
Junction at 12 o'clock, 225mm dia



3, 00:00:40, 10.00 m
Junction at 12 o'clock, 225mm dia



4, 00:04:02, 11.60 m
Junction at 2 o'clock, 150mm dia



5, 00:01:47, 21.70 m
Junction at 10 o'clock, 150mm dia



6, 00:03:03, 25.60 m
Junction at 2 o'clock, 150mm dia

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Section Pictures - 15/10/2021 - 9401X

Item No.	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
11	Downstream	9401X		



7, 00:02:48, 27.40 m
Junction at 1 o'clock, 150mm dia

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