

Appendix J – Greenfield vs. Brownfield Storage Volumes

Summary of Results for 100 year Return Period (+45%)

Half Drain Time : 261 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	1.703	1.203	0.0	28.1	28.1	599.9	O K
30 min Summer	1.823	1.323	0.0	28.1	28.1	660.0	O K
60 min Summer	1.918	1.418	0.0	28.1	28.1	707.2	O K
120 min Summer	1.945	1.445	0.0	28.1	28.1	720.7	O K
180 min Summer	1.902	1.402	0.0	28.1	28.1	699.3	O K
240 min Summer	1.838	1.338	0.0	28.1	28.1	667.1	O K
360 min Summer	1.728	1.228	0.0	28.1	28.1	612.7	O K
480 min Summer	1.638	1.138	0.0	28.1	28.1	567.4	O K
600 min Summer	1.556	1.056	0.0	28.1	28.1	526.7	O K
720 min Summer	1.480	0.980	0.0	28.1	28.1	488.7	O K
960 min Summer	1.383	0.883	0.0	28.1	28.1	440.5	O K
1440 min Summer	1.197	0.697	0.0	28.1	28.1	347.6	O K
2160 min Summer	0.959	0.459	0.0	28.1	28.1	228.8	O K
2880 min Summer	0.784	0.284	0.0	28.1	28.1	141.5	O K
4320 min Summer	0.599	0.099	0.0	27.9	27.9	49.4	O K
5760 min Summer	0.578	0.078	0.0	21.8	21.8	38.9	O K
7200 min Summer	0.565	0.065	0.0	18.2	18.2	32.2	O K
8640 min Summer	0.555	0.055	0.0	15.5	15.5	27.5	O K
10080 min Summer	0.549	0.049	0.0	13.7	13.7	24.2	O K
15 min Winter	1.857	1.357	0.0	28.1	28.1	676.9	O K
30 min Winter	1.997	1.497	0.0	28.1	28.1	746.4	O K
60 min Winter	2.113	1.613	0.0	28.1	28.1	804.6	O K
120 min Winter	2.167	1.667	0.0	28.1	28.1	831.3	O K
180 min Winter	2.139	1.639	0.0	28.1	28.1	817.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	233.627	0.0	646.1	33
30 min Summer	130.931	0.0	724.2	46
60 min Summer	73.377	0.0	811.7	72
120 min Summer	41.122	0.0	909.8	128
180 min Summer	29.307	0.0	972.6	182
240 min Summer	23.046	0.0	1019.8	216
360 min Summer	16.424	0.0	1090.2	276
480 min Summer	12.916	0.0	1143.0	342
600 min Summer	10.719	0.0	1185.8	408
720 min Summer	9.205	0.0	1221.7	474
960 min Summer	7.439	0.0	1316.4	610
1440 min Summer	5.510	0.0	1462.6	870
2160 min Summer	4.081	0.0	1624.9	1236
2880 min Summer	3.298	0.0	1750.9	1572
4320 min Summer	2.331	0.0	1856.7	2204
5760 min Summer	1.823	0.0	1935.5	2936
7200 min Summer	1.506	0.0	1999.0	3672
8640 min Summer	1.289	0.0	2052.4	4344
10080 min Summer	1.129	0.0	2098.8	5104
15 min Winter	233.627	0.0	723.7	33
30 min Winter	130.931	0.0	811.1	46
60 min Winter	73.377	0.0	909.1	74
120 min Winter	41.122	0.0	1019.0	128
180 min Winter	29.307	0.0	1089.3	182

Unit 23, The Maltings
 Stanstead Abbotts
 Hertfordshire, SG12 8HG

LARGEST PROP
 CATCHMENT WITH
 ALL GRR



Date 14/09/2022 13:36
 File QSE GRR TEST 28LS.SRCX

Designed by EAS
 Checked by

Innovyze

Source Control 2020.1.3

Summary of Results for 100 year Return Period (+45%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
240 min Winter	2.079	1.579	0.0	28.1	28.1	787.3	O K
360 min Winter	1.938	1.438	0.0	28.1	28.1	717.0	O K
480 min Winter	1.817	1.317	0.0	28.1	28.1	656.8	O K
600 min Winter	1.700	1.200	0.0	28.1	28.1	598.7	O K
720 min Winter	1.588	1.088	0.0	28.1	28.1	542.8	O K
960 min Winter	1.432	0.932	0.0	28.1	28.1	464.8	O K
1440 min Winter	1.137	0.637	0.0	28.1	28.1	317.7	O K
2160 min Winter	0.789	0.289	0.0	28.1	28.1	144.1	O K
2880 min Winter	0.604	0.104	0.0	28.1	28.1	52.0	O K
4320 min Winter	0.572	0.072	0.0	20.3	20.3	35.9	O K
5760 min Winter	0.557	0.057	0.0	15.9	15.9	28.2	O K
7200 min Winter	0.547	0.047	0.0	13.1	13.1	23.2	O K
8640 min Winter	0.540	0.040	0.0	11.3	11.3	20.0	O K
10080 min Winter	0.535	0.035	0.0	9.9	9.9	17.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
240 min Winter	23.046	0.0	1142.2	236
360 min Winter	16.424	0.0	1221.0	296
480 min Winter	12.916	0.0	1280.2	370
600 min Winter	10.719	0.0	1328.1	444
720 min Winter	9.205	0.0	1368.6	518
960 min Winter	7.439	0.0	1474.4	660
1440 min Winter	5.510	0.0	1638.1	924
2160 min Winter	4.081	0.0	1820.2	1268
2880 min Winter	3.298	0.0	1961.1	1504
4320 min Winter	2.331	0.0	2079.5	2192
5760 min Winter	1.823	0.0	2167.8	2944
7200 min Winter	1.506	0.0	2238.9	3664
8640 min Winter	1.289	0.0	2298.8	4344
10080 min Winter	1.129	0.0	2350.6	5144

Unit 23, The Maltings
 Stanstead Abbotts
 Hertfordshire, SG12 8HG

LARGEST PROP
 CATCHMENT WITH
 ALL GRR



Date 14/09/2022 13:36
 File QSE GRR TEST 28LS.SRCX

Designed by EAS
 Checked by

Innovyze Source Control 2020.1.3


Rainfall Details

Rainfall Model	FEH	F (1km)	2.498
Return Period (years)	100	Summer Storms	Yes
FEH Rainfall Version	1999	Winter Storms	Yes
Site Location	GB 622800 309650 TG 22800 09650	Cv (Summer)	0.750
C (1km)	-0.024	Cv (Winter)	0.840
D1 (1km)	0.275	Shortest Storm (mins)	15
D2 (1km)	0.370	Longest Storm (mins)	10080
D3 (1km)	0.255	Climate Change %	+45
E (1km)	0.310		

Time Area Diagram

Total Area (ha) 1.475

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
From:	To:	From:	To:	From:	To:	From:	To:	From:	To:
0	4	4	8	8	12	12	16	16	20
	0.295		0.295		0.295		0.295		0.295

EAS Transport Planning		Page 4
Unit 23, The Maltings Stanstead Abbotts Hertfordshire, SG12 8HG	LARGEST PROP CATCHMENT WITH ALL GRR	
Date 14/09/2022 13:36 File QSE GRR TEST 28LS.SRCX	Designed by EAS Checked by	
Innovyze	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 4.050

Cellular Storage Structure

Invert Level (m) 0.500 Safety Factor 2.0
 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
 Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	525.0	0.0	1.320	525.0	0.0	1.671	0.0	0.0
0.660	525.0	0.0	1.670	525.0	0.0			

Pump Outflow Control

Invert Level (m) 0.500

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	28.1000	0.700	28.1000	1.300	28.1000	1.900	28.1000	2.500	28.1000
0.200	28.1000	0.800	28.1000	1.400	28.1000	2.000	28.1000	2.600	28.1000
0.300	28.1000	0.900	28.1000	1.500	28.1000	2.100	28.1000	2.700	28.1000
0.400	28.1000	1.000	28.1000	1.600	28.1000	2.200	28.1000	2.800	28.1000
0.500	28.1000	1.100	28.1000	1.700	28.1000	2.300	28.1000	2.900	28.1000
0.600	28.1000	1.200	28.1000	1.800	28.1000	2.400	28.1000	3.000	28.1000

Unit 23, The Maltings
 Stanstead Abbotts
 Hertfordshire, SG12 8HG

LARGEST PROP
 CATCHMENT WITH
 65 L/S



Date 14/09/2022 13:43
 File QSE GRR TEST 65LS.SRCX

Designed by EAS
 Checked by

Innovyze

Source Control 2020.1.3

Summary of Results for 100 year Return Period (+45%)

Half Drain Time : 97 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	1.830	1.330	0.0	65.0	65.0	543.1	O K
30 min Summer	1.930	1.430	0.0	65.0	65.0	584.1	O K
60 min Summer	1.940	1.440	0.0	65.0	65.0	588.2	O K
120 min Summer	1.788	1.288	0.0	65.0	65.0	526.3	O K
180 min Summer	1.656	1.156	0.0	65.0	65.0	472.3	O K
240 min Summer	1.543	1.043	0.0	65.0	65.0	426.3	O K
360 min Summer	1.346	0.846	0.0	65.0	65.0	345.5	O K
480 min Summer	1.174	0.674	0.0	65.0	65.0	275.4	O K
600 min Summer	1.027	0.527	0.0	65.0	65.0	215.1	O K
720 min Summer	0.903	0.403	0.0	65.0	65.0	164.4	O K
960 min Summer	0.746	0.246	0.0	65.0	65.0	100.5	O K
1440 min Summer	0.600	0.100	0.0	65.0	65.0	41.0	O K
2160 min Summer	0.575	0.075	0.0	48.9	48.9	30.7	O K
2880 min Summer	0.561	0.061	0.0	39.8	39.8	24.9	O K
4320 min Summer	0.543	0.043	0.0	28.1	28.1	17.6	O K
5760 min Summer	0.534	0.034	0.0	21.9	21.9	13.9	O K
7200 min Summer	0.528	0.028	0.0	18.4	18.4	11.5	O K
8640 min Summer	0.524	0.024	0.0	15.8	15.8	9.8	O K
10080 min Summer	0.521	0.021	0.0	13.8	13.8	8.6	O K
15 min Winter	2.014	1.514	0.0	65.0	65.0	618.7	O K
30 min Winter	2.136	1.636	0.0	65.0	65.0	668.1	O K
60 min Winter	2.170	1.670	0.0	65.0	65.0	682.1	O K
120 min Winter	2.014	1.514	0.0	65.0	65.0	618.6	O K
180 min Winter	1.838	1.338	0.0	65.0	65.0	546.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	233.627	0.0	646.1	31
30 min Summer	130.931	0.0	724.2	42
60 min Summer	73.377	0.0	811.7	66
120 min Summer	41.122	0.0	909.8	102
180 min Summer	29.307	0.0	972.6	134
240 min Summer	23.046	0.0	1019.8	168
360 min Summer	16.424	0.0	1090.0	234
480 min Summer	12.916	0.0	1142.9	298
600 min Summer	10.719	0.0	1185.6	358
720 min Summer	9.205	0.0	1221.7	416
960 min Summer	7.439	0.0	1316.4	530
1440 min Summer	5.510	0.0	1462.6	740
2160 min Summer	4.081	0.0	1625.1	1100
2880 min Summer	3.298	0.0	1751.0	1464
4320 min Summer	2.331	0.0	1856.8	2196
5760 min Summer	1.823	0.0	1935.6	2936
7200 min Summer	1.506	0.0	1999.1	3584
8640 min Summer	1.289	0.0	2052.6	4328
10080 min Summer	1.129	0.0	2098.9	5072
15 min Winter	233.627	0.0	723.7	31
30 min Winter	130.931	0.0	811.1	43
60 min Winter	73.377	0.0	909.1	66
120 min Winter	41.122	0.0	1019.0	112
180 min Winter	29.307	0.0	1089.3	146

Unit 23, The Maltings
 Stanstead Abbotts
 Hertfordshire, SG12 8HG

LARGEST PROP
 CATCHMENT WITH
 65 L/S



Date 14/09/2022 13:43
 File QSE GRR TEST 65LS.SRCX

Designed by EAS
 Checked by

Innovyze Source Control 2020.1.3

Summary of Results for 100 year Return Period (+45%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
240 min Winter	1.677	1.177	0.0	65.0	65.0	481.0	O K
360 min Winter	1.382	0.882	0.0	65.0	65.0	360.1	O K
480 min Winter	1.124	0.624	0.0	65.0	65.0	255.1	O K
600 min Winter	0.910	0.410	0.0	65.0	65.0	167.7	O K
720 min Winter	0.744	0.244	0.0	65.0	65.0	99.6	O K
960 min Winter	0.599	0.099	0.0	64.2	64.2	40.4	O K
1440 min Winter	0.574	0.074	0.0	47.9	47.9	30.0	O K
2160 min Winter	0.555	0.055	0.0	35.6	35.6	22.3	O K
2880 min Winter	0.544	0.044	0.0	28.8	28.8	18.0	O K
4320 min Winter	0.531	0.031	0.0	20.3	20.3	12.7	O K
5760 min Winter	0.525	0.025	0.0	16.1	16.1	10.0	O K
7200 min Winter	0.520	0.020	0.0	13.2	13.2	8.3	O K
8640 min Winter	0.517	0.017	0.0	11.2	11.2	7.0	O K
10080 min Winter	0.515	0.015	0.0	9.9	9.9	6.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
240 min Winter	23.046	0.0	1142.2	182
360 min Winter	16.424	0.0	1220.8	252
480 min Winter	12.916	0.0	1280.0	316
600 min Winter	10.719	0.0	1328.1	374
720 min Winter	9.205	0.0	1368.3	426
960 min Winter	7.439	0.0	1474.5	500
1440 min Winter	5.510	0.0	1638.1	736
2160 min Winter	4.081	0.0	1820.0	1096
2880 min Winter	3.298	0.0	1961.2	1452
4320 min Winter	2.331	0.0	2079.5	2196
5760 min Winter	1.823	0.0	2167.9	2912
7200 min Winter	1.506	0.0	2239.1	3608
8640 min Winter	1.289	0.0	2298.8	4400
10080 min Winter	1.129	0.0	2350.7	5024

Unit 23, The Maltings
 Stanstead Abbotts
 Hertfordshire, SG12 8HG

LARGEST PROP
 CATCHMENT WITH
 65 L/S



Date 14/09/2022 13:43
 File QSE GRR TEST 65LS.SRCX

Designed by EAS
 Checked by

Innovyze Source Control 2020.1.3


Rainfall Details

Rainfall Model	FEH	F (1km) 2.498
Return Period (years)	100	Summer Storms Yes
FEH Rainfall Version	1999	Winter Storms Yes
Site Location	GB 622800 309650 TG 22800 09650	Cv (Summer) 0.750
C (1km)	-0.024	Cv (Winter) 0.840
D1 (1km)	0.275	Shortest Storm (mins) 15
D2 (1km)	0.370	Longest Storm (mins) 10080
D3 (1km)	0.255	Climate Change % +45
E (1km)	0.310	

Time Area Diagram

Total Area (ha) 1.475

Time (mins) From:	To:	Area (ha)	Time (mins) From:	To:	Area (ha)	Time (mins) From:	To:	Area (ha)	Time (mins) From:	To:	Area (ha)	Time (mins) From:	To:	Area (ha)
0	4	0.295	4	8	0.295	8	12	0.295	12	16	0.295	16	20	0.295

EAS Transport Planning		Page 4
Unit 23, The Maltings Stanstead Abbotts Hertfordshire, SG12 8HG	LARGEST PROP CATCHMENT WITH 65 L/S	
Date 14/09/2022 13:43 File QSE GRR TEST 65LS.SRCX	Designed by EAS Checked by	
Innovyze	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 4.050

Cellular Storage Structure

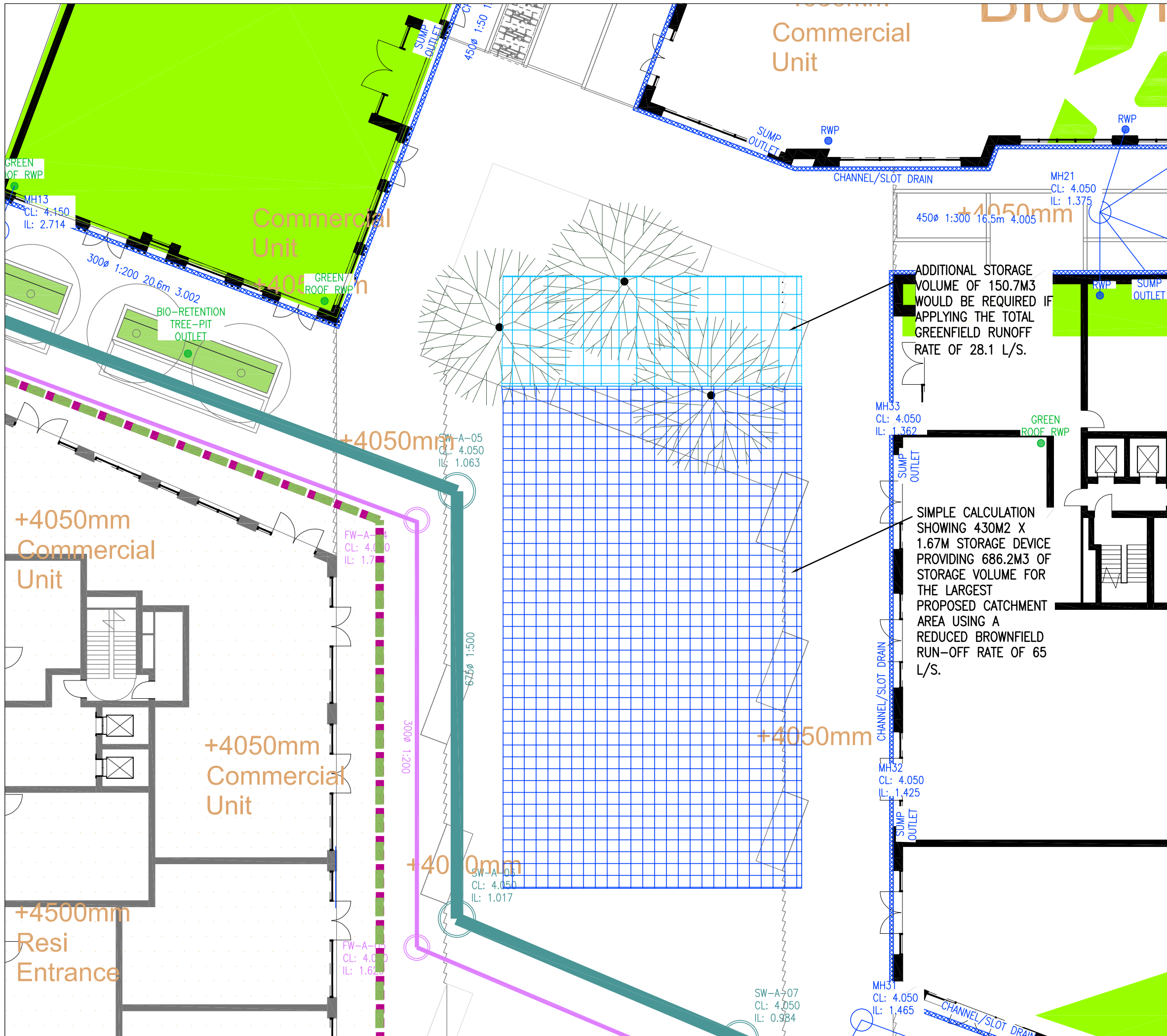
Invert Level (m) 0.500 Safety Factor 2.0
 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
 Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	430.0	0.0	1.320	430.0	0.0	1.671	0.0	0.0
0.660	430.0	0.0	1.670	430.0	0.0			

Pump Outflow Control

Invert Level (m) 0.500

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	65.0000	0.700	65.0000	1.300	65.0000	1.900	65.0000	2.500	65.0000
0.200	65.0000	0.800	65.0000	1.400	65.0000	2.000	65.0000	2.600	65.0000
0.300	65.0000	0.900	65.0000	1.500	65.0000	2.100	65.0000	2.700	65.0000
0.400	65.0000	1.000	65.0000	1.600	65.0000	2.200	65.0000	2.800	65.0000
0.500	65.0000	1.100	65.0000	1.700	65.0000	2.300	65.0000	2.900	65.0000
0.600	65.0000	1.200	65.0000	1.800	65.0000	2.400	65.0000	3.000	65.0000



REV	DATE	BY	DESCRIPTION	CHK	APD

DRAWING STATUS: **FOR INFORMATION**

Ordnance Survey (c) Crown Copyright 2018. All rights reserved. Licence number 100022432



Unit 23, The Maltings, Stanstead Abbots, Hertfordshire, SG12 8HG
Tel: 01920 871777
www.eastp.co.uk

CLIENT: **WESTON HOMES**

ARCHITECT:

PROJECT: **ANGLIA SQUARE, NORWICH**

TITLE: **ATTENUATION VOLUME COMPARISON GREENFIELD VS BROWNFIELD RUNOFF**

SCALE © A3: **1:200** DESIGN-DRAWN: **MD** DATE: **14.09.2022**

PROJECT No: DRAWING No: **SK04**

Appendix K – Anglian Water Pre-Development Enquiry



Pre-Planning Assessment Report

Anglia Square

InFlow Reference: PPE-0143339

Assessment Type: Used Water

Report published: 08/04/2022



Thank you for submitting a pre-planning enquiry.

This has been produced for EAS Transport Planning Ltd.

Your reference number is **PPE-0143339**.

This report can be submitted as a drainage strategy for the development should it seek planning permission.

If you have any questions upon receipt of this report, you can submit a further question via InFlow. Alternatively, please contact the Planning & Capacity team on **07929 786 955** or email planningliaison@anglianwater.co.uk

Section 1 - Proposed development

The response within this report has been based on the following information which was submitted as part of your application:

List of planned developments	
Type of development	No. Of units
Shops	50
Restaurants and cafes	25
Dwellings	1500

The anticipated residential build rate is:

Year	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12
Build rate	50	50	50	50	50	50	50	50	50	50	50	1025

Development type: Brownfield

Planning application status: Unknown

Site grid reference number: TG2302009411

The comments contained within this report relate to the public water mains and sewers indicated on our records.

Your attention is drawn to the disclaimer in the useful information section of this report.

Section 2 - Assets affected

Our records indicate that we have the following types of assets within or overlapping the boundary of your development site as listed in the table below.

Additionally, it is highly recommended that you carry out a thorough investigation of your proposed working area to establish whether any unmapped public or private sewers and lateral drains are in existence. We are unable to permit development either over or within the easement strip without our prior consent. The extent of the easement is provided in the table below. Please be aware that the existing water mains/public sewers should be located in highway or open space and not in private gardens. This is to ensure available access for any future maintenance and repair and this should be taken into consideration when planning your site layout.

Water and Used water easement information		
Asset type	Pipe size (mm)	Total easement required (m)
Water mains	152	6.00 m overall easement
Water mains	76	6.00 m overall easement
Water mains	102	4.50 m overall easement
Water mains	127	6.00 m overall easement
Water mains	102	4.50 m overall easement
Sewer mains	675	6.00 m either side of the centre line
Sewer mains	300	3.00 m either side of the centre line
Sewer mains	225	3.00 m either side of the centre line
Sewer mains	150	3.00 m either side of the centre line
Sewer mains	9	3.00 m either side of the centre line
Sewer mains	Unknown	3.00 m either side of the centre line
Sewer mains	27	3.00 m either side of the centre line
Sewer mains	7	4.50 m either side of the centre line
Sewer mains	850	4.00 m either side of the centre line
Sewer mains	36	3.00 m either side of the centre line
Sewer mains	24	6.00 m either side of the centre line
Sewer mains	375	3.00 m either side of the centre line
Sewer mains	225	3.00 m either side of the centre line

If it is not possible to avoid our assets then these may need to be diverted in accordance with Section 185 of the Water Industry Act (1991). You will need to make a formal application if you would like a diversion to be considered.

Due to the private sewer transfer in October 2011 many newly adopted public used water assets and their history are not indicated on our records. You also need to be aware that your development site may contain private water mains, drains or other assets not shown on our records. These are private assets and not the responsibility of Anglian Water but that of the landowner.

Section 3 - Water recycling services

In examining the used water system we assess the ability for your site to connect to the public sewerage network without causing a detriment to the operation of the system. We also assess the receiving water recycling centre and determine whether the water recycling centre can cope with the increased flow and effluent quality arising from your development.

Water recycling centre

The foul drainage from the proposed development is in the catchment of Whitlingham Trowse Water Recycling Centre, which currently has capacity to treat the flows from your development site. Anglian Water cannot reserve capacity and the available capacity at the water recycling centre can be reduced at any time due to growth, environmental and regulation driven changes.

Used water network

Our assessment has been based on development flows connecting to the nearest foul water sewer of the same size or greater pipe diameter to that required to drain the site. The infrastructure to convey foul water flows to the receiving sewerage network is assumed to be the responsibility of the developer. Conveyance to the connection point is considered as Onsite Work and includes all work carried out upstream from of the point of connection, including making the connection to our existing network. This connection point has been determined in reference to the calculated discharge flow and on this basis, a 375mm internal diameter pipe is required to drain the development site. The preferred connection point at manhole 1310 is to a 300mm sewer, that does not have capacity to accommodate the flows from the full development. The foul sewerage system will have capacity for the development if the connection is made over several points across the network surrounding the development site.

In order to assess a suitable drainage strategy and provide connection points, please provide us with a site layout and phasing plan. Anglian water has assessed the impact of gravity flows from the planned development to the public foul sewerage network. We can confirm that this is acceptable as the foul sewerage system, at present, has available capacity for your site.

Please note that Anglian Water will request a suitably worded condition at planning application stage to ensure this strategy is implemented to mitigate the risk of flooding.

It is assumed that the developer will provide the necessary infrastructure to convey flows from the site to the network. Consequently, this report does not include any costs for the conveyance of flows.

Surface water disposal

In principle, your proposed method of surface water disposal is acceptable to Anglian Water. It is our understanding that the evidence to confirm compliance with the surface water hierarchy is not available. Once the evidence has been confirmed, then a connection point may be made to manhole 1355 at NGR TG 23145 09319 at a rate of 242l/s. Our assessment has been based on development flows connecting to the nearest surface water sewer of the same size or greater pipe diameter. It is your responsibility to provide the evidence to confirm that all alternative methods of surface water disposal have been explored and these will be required before your connection can be agreed. This is subject to satisfactory evidence which shows the surface water management hierarchy as outlined in Building Regulations Part H has been explored. This would encompass the results from the site specific infiltration testing and/or confirmation that the flows cannot be discharged to a watercourse. Anglian Water's surface water policy follows the Surface Water hierarchy, outlined in Part H of the Building Regulations. Should your assumptions or evidence change then an alternative solution, connection point or flow rate may be required.

You are therefore advised to update Anglian Water with the key supporting evidence at your earliest convenience.

As you may be aware, Anglian Water will consider the adoption of SuDs provided that they meet the criteria outline in our SuDs adoption manual. This can be found on our [website](#). We will adopt features located in public open space that are designed and constructed, in conjunction with the Local Authority and Lead Local Flood Authority (LLFA), to the criteria within our SuDs adoption manual. Specifically, developers must be able to demonstrate:

1. Effective upstream source control,
2. Effective exceedance design, and
3. Effective maintenance schedule demonstrating that the assets can be maintained both now and in the future with adequate access.

If you wish to look at the adoption of any SuDs then an expression of interest form can be found on our [website](#)

Trade Effluent

We note that you do not have any trade effluent requirements. Should this be required in the future you will need our written formal consent. This is in accordance with Section 118 of the Water Industry Act (1991).

Used Water Budget Costs

Your development site will be required to pay an Infrastructure charge for each new property connecting to the public water and sewerage network that benefits from Full planning permission. The infrastructure charge replaces the zonal charge as previously identified.

You will be required to pay an infrastructure charge upon connection for each new plot on your development site. The infrastructure charge are types of charges set out in Section 146(2) of the Water Industry Act 1991.

The charge should be paid by anyone who wishes to build or develop a property and is payable upon request of connection.

- The Infrastructure Charge is based on the cost of any reinforcement and upgrades to our existing network (“Network Reinforcements”), whether designed to address strategic or local capacity issues. For more information on our Infrastructure Charge, please see the ‘Useful Information’ section of this report.

Infrastructure charges are raised on a standard basis of one charge per new connection (one for water and one for sewerage).

The Water Recycling Infrastructure charge for your dwellings is:

Infrastructure charge	Number of units	Total
£ 490	1500	£735,000.00

Please note that you should also budget for infrastructure charges on non-household premises where applicable and these will be calculated according to the number and type of water fittings in the premises. This is called the “relevant multiplier” method of calculating the charge and the relevant multiplier will be applied to the figures set out in our 2022-23 Developer Charging Arrangements to arrive at the amount payable. Details of the relevant multiplier for each fitting can be found on our [website](#).

Section 4 - Map of Proposed Point of Connection(s)

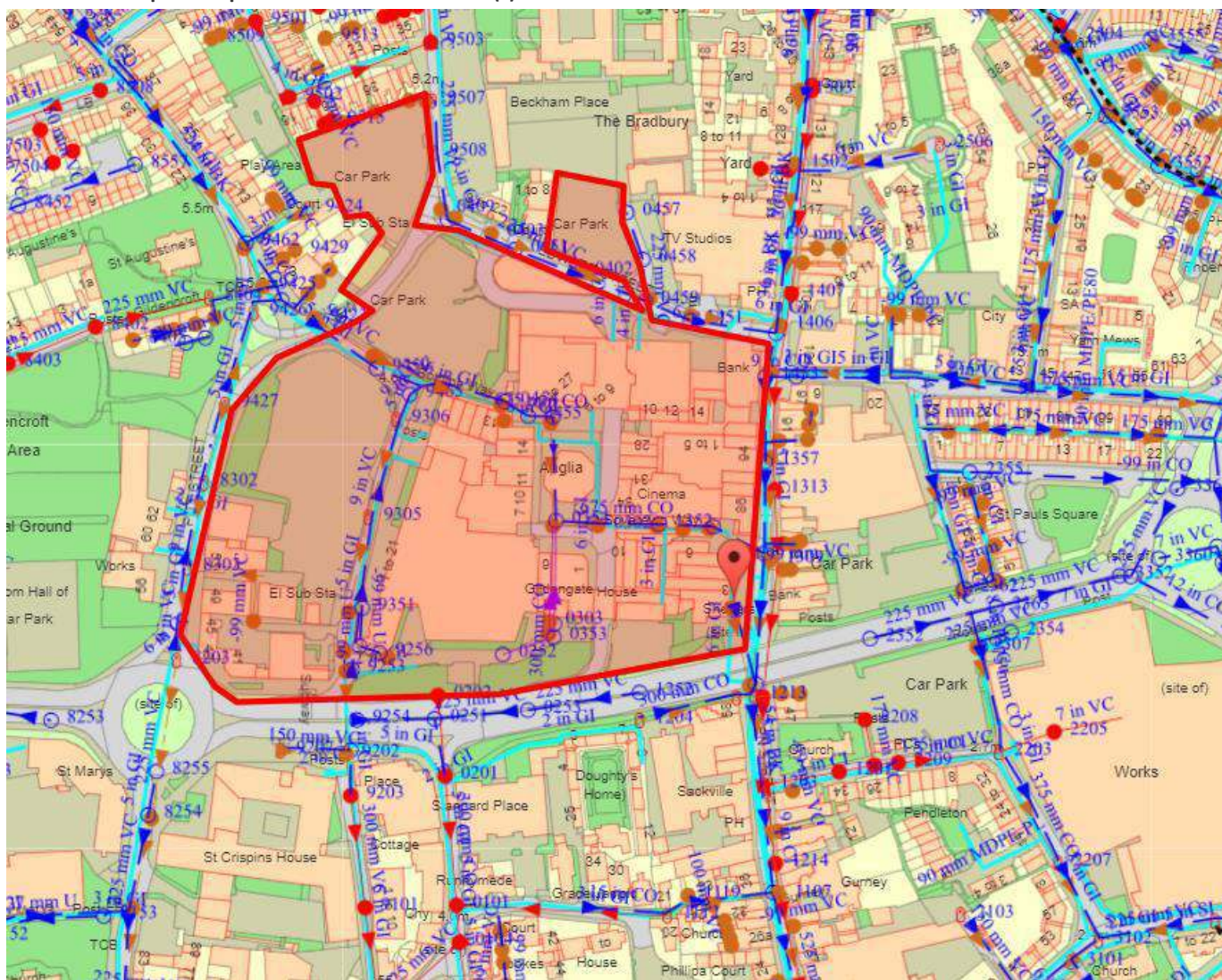


Figure 2: Showing your water recycling surface water point of connection

Section 5 - Useful information

Water Industry Act – Key used water sections

Section 98:

This provides you with the right to requisition a new public sewer. The new public sewer can be constructed by Anglian Water on your behalf. Alternatively, you can construct the sewer yourself under section 30 of the Anglian Water Authority Act 1977.

Section 102:

This provides you with the right to have an existing sewerage asset vested by us. It is your responsibility to bring the infrastructure to an adoptable condition ahead of the asset being vested.

Section 104:

This provides you with the right to have a design technically vetted and an agreement reached that will see us adopt your assets following their satisfactory construction and connection to the public sewer.

Section 106:

This provides you with the right to have your constructed sewer connected to the public sewer.

Section 185

This provides you with the right to have a public sewerage asset diverted.

Details on how to make a formal application for a new sewer, new connection or diversion are available on our [website](#) or via our Development Services team on **0345 60 66 087**.

Sustainable drainage systems

Many existing urban drainage systems can cause problems of flooding, pollution or damage to the environment and are not resilient to climate change in the long term. .

Our preferred method of surface water disposal is through the use of Sustainable Drainage Systems or SuDS.

SuDS are a range of techniques that aim to mimic the way surface water drains in natural systems within urban areas. For more information on SuDS, please visit our [website](#)

We recommend that you contact the Local Authority and Lead Local Flood Authority (LLFA) for your site to discuss your application.

Private sewer transfers

Sewers and lateral drains connected to the public sewer on the 1 July 2011 transferred into Water Company ownership on the 1 October 2011. This follows the implementation of the Floods and Water Management Act (FWMA). This included sewers and lateral drains that were subject to an existing Section 104 Adoption Agreement and those that were not. There were exemptions and the main non-transferable assets were as follows:

Surface water sewers and lateral drains that do not discharge to the public sewer, e.g. those that discharged to a watercourse.

Foul sewers and lateral drains that discharged to a privately owned sewage treatment/collection facility.

Pumping stations and rising mains will transfer between 1 October 2011 and 1 October 2016.

The implementation of Section 42 of the FWMA will ensure that future private sewers will not be created. It is anticipated that all new sewer applications will need to have an approved section 104 application ahead of a section 106 connection.

It is anticipated that all new sewer applications will need to have an approved Section 104 application ahead of a Section 106 connection

Encroachment

Anglian Water operates a risk based approach to development encroaching close to our used water infrastructure. We assess the issue of encroachment if you are planning to build within 400 metres of a water recycling centre or, within 15 metres to 100 metres of a pumping station. We have more information available on our [website](#)

Locating our assets

Maps detailing the location of our water and used water infrastructure including both underground assets and above ground assets such as pumping stations and recycling centres are available from [digdat](#)

All requests from members of the public or non-statutory bodies for maps showing the location of our assets will be subject to an appropriate administrative charge.

We have more information on our [website](#)

Charging arrangements

Our charging arrangements and summary for this year's water and used water connection and infrastructure charges can be found on our [website](#)

Section 6 - Disclaimer

The information provided in this report is based on data currently held by Anglian Water Services Limited ('Anglian Water') or provided by a third party. Accordingly, the information in this report is provided with no guarantee of accuracy, timeliness, completeness and is without indemnity or warranty of any kind (express or implied).

This report should not be considered in isolation and does not nullify the need for the enquirer to make additional appropriate searches, inspections and enquiries. Anglian Water supports the plan led approach to sustainable development that is set out in the National Planning Policy Framework ('NPPF') and any infrastructure needs identified in this report must be considered in the context of current, adopted and/or emerging local plans. Where local plans are absent, silent or have expired these needs should be considered against the definition of sustainability holistically as set out in the NPPF.

Whilst the information in this report is based on the presumption that proposed development obtains planning permission, nothing in this report confirms that planning permission will be granted or that Anglian Water will be bound to carry out the works/proposals contained within this report.

No liability whatsoever, including liability for negligence is accepted by Anglian Water or its partners, employees or agents, for any error or omission, or for the results obtained from the use of this report and/or its content.

Furthermore, in no event will any of those parties be liable to the applicant or any third party for any decision made or action taken as a result of reliance on this report.

This report is valid from the date issued and the enquirer is advised to resubmit their request for an up to date report should there be a delay in submitting any subsequent application for water supply/sewer connection(s). Our pre-planning reports are valid for 12 months, however please note Anglian Water cannot reserve capacity and available capacity in our network can be reduced at any time due to increased requirements from existing businesses and houses as well as from new housing and new commercial developments.

Appendix L – Anglian Water Agreement in Principle for Outfalls

Marianna Dyason

From: Richard Lyon <rlyon@anglianwater.co.uk>
Sent: 15 September 2022 11:28
To: Marianna Dyason
Cc: Stephen Adams; Jack Riggs; Charlotte Booker; Paul Lancaster; Hannah Wilson; Steve Webb
Subject: RE: Anglia Square - LLFA Norfolk Meeting

Hi Marianna

Sorry about the delay in responding, I was out of the office yesterday.

I can confirm that we are satisfied that the proposed discharge limit of 242l/s for the whole of the development is a reduction on the existing. The proposed points of connection in Edwards Street and to the two manholes on the proposed diversion of the 675mm SW sewer, at the proposed discharge rate limits are acceptable.

The proposed sewer diversion route is also acceptable, although the detail of its vertical alignment will need to be finalised in detail design with further hydraulic analysis. We believe that this detail design should form part of your S185 diversion application. As discussed, we will provide a cost and timescale estimate for the necessary hydraulic analysis shortly.

Regards

Richard Lyon

Pre-development Senior Engineer

Development Services

Anglian Water Services Limited

Thorpe Wood House, Thorpe Wood,

Peterborough, Cambridgeshire, PE3 6WT

Tel. 07929786955

www.anglianwater.co.uk



Appendix M – Roof Level Soft Landscaping Plan (Green Roofs)



THIS DRAWING IS COPYRIGHT PROTECTED AND MAY NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN AUTHORITY FROM THE OWNER.

- NOTES:
1. Do not scale from this drawing.
 2. Always work to noted dimensions.
 3. All dimensions are in millimetres unless otherwise stated.
 4. All setting out, levels and dimensions to be agreed on site.
 5. The dimensions of all materials must be checked on site before being laid out.
 6. This drawing must be read with the relevant specification clauses and detail drawings.
 7. Order of construction and setting out to be agreed on site.

KEY

BOUNDARIES

- HYBRID APPLICATION BOUNDARY
- LAND OWNED BY CT
- DETAIL APPLICATION BOUNDARY

HARDWORKS

- CONCRETE BLOCK PAVING TYPE S3.1**
Location: Secondary pedestrian routes
Material: Small-format pre-cast concrete block paving with exposed natural stone aggregate
Size: 200(L) x 100(W)mm
Colour: Warm Grey mix
Laid: Unbound construction, stretcher bond
- CONCRETE BLOCK PAVING TYPE S3.4**
Location: Roof terraces
Material: Small-format pre-cast concrete block paving with exposed natural stone aggregate
Size: 200(L) x 100(W)mm
Colour: Dark Grey
Laid: Unbound construction, stretcher bond
- WET-POUR SAFETY SURFACE TYPE S9**
Location: Roof terraces
Material: Wet pour in situ polyurethane bound EPDM rubber surface
Colour: Yellow

FURNITURE

- TIMBER BENCH TYPE F1**
Location: Throughout, stand-alone and integrated with planters
Material: Steel frame with hardwood seating surfaces
Finish: Integrated back and arm rests
- PICNIC TABLES TYPE F4**
Location: Anglia Square
Material: Sheffield hoop style cycle stands
Finish: Galvanneal and powder coated RAL TBC
- INFORMAL PLAY TYPE F5**
Location: In areas of soft landscape
Material: Informal play equipment such as stepping stones, logs, boulders etc.

SOFTWORKS

- LAWNS**
Species-rich grassland
- PLANTING AREA**
Refer to site-specific drawing and report for detailed breakdown of planting typologies
- MIXED NATIVE HEDGING TYPE F6**
Mixed species native hedging
Maintained at 1.2m(h)
- TREE PLANTING TYPE T1**
Refer to schedule for specification
- MULTI-STEM TREE PLANTING TYPE T2**
Refer to schedule for specification
- EXISTING TREE PLANTING TYPE T3**
To be retained
- TYPE 1 EXTENSIVE GREEN ROOF**
Extensive green roof system, Pre-grown wildflower blanket on lightweight substrate.
- TYPE 2 EXTENSIVE GREEN ROOF**
Extensive green roof system, Pre-grown sedum mat on lightweight substrate.

Revision	Date	Description	Planned	Drawn	Appr'd
P05	06.01.23		JV	DF	

Plantit I.E. Limited
 E: info@plantit-ie.com W: plantit-ie.com
 MANCHESTER
 2 Back Grafton St, Altrincham, WA14 1DY
 T: 0161 928 9281

LEEDS
 No.1 Aire Street, Leeds Station, Leeds, LS1 4PR
 T: 0113 824 6413

LIVERPOOL
 Tempest 5.3, 12 Tithebarn Street, Liverpool, L2 2DT
 T: 0151 363 1230

LONDON
 Unit 6 Waterside, 44-48 Wharf Road, London, N1 7LX
 T: 0207 253 5678

STANDISH
 Standish Gatehouse, Stonehouse, Gloucestershire, GL10 3BZ
 T: 0145 360 7080

Client: Weston Homes

Project: Anglia Square

Drg Title: Landscape Masterplan Roof Level_RevC

Created on: 01.04.2022
 Created by: JV
 Approved by: DF

Scale: 1:500
 Size: A1
 Workstage: PLANNING

Drg No.: ANG-PLA-XX-XX-DR-L-0002
 Suitability: S4
 Revision: P05
 © Plantit I.E. Limited

Appendix N – Hard and Soft Landscaping Masterplan

THIS DRAWING IS COPYRIGHT PROTECTED AND MAY NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN AUTHORITY FROM THE OWNER.

- NOTES:
- Do not scale from this drawing.
 - Always work to noted dimensions.
 - All dimensions are in millimetres unless otherwise stated.
 - All setting out, levels and dimensions to be agreed on site.
 - The dimensions of all materials must be checked on site before being laid out.
 - This drawing must be read with the relevant specification clauses and detail drawings.
 - Order of construction and setting out to be agreed on site.



- ### HARDWORKS
- BITUMINOUS MACADAM TYPE S1**
Location: Highways and vehicular cross-overs throughout
Material: Bituminous macadam to match existing highways
Colour: Black. Surface treatment to match existing
 - FEATURE CONCRETE BLOCK PAVING TYPE S2.1**
Location: Anglia Square peripheral routes
Material: Small-format concrete block paving
Size: 200(L) x 100(W)mm
Colour: Buff mix
Laid: Unbound construction, Stretcher bond
 - FEATURE CONCRETE BLOCK PAVING TYPE S2.2**
Location: Anglia Square peripheral routes
Material: Large-format concrete slab paving
Size: 600(L) x 300(W)mm
Colour: Buff mix
Laid: Unbound construction, Stretcher bond
 - CONCRETE BLOCK PAVING TYPE S3.1**
Location: Secondary pedestrian routes
Material: Small-format pre-cast concrete block paving with exposed natural stone aggregate
Size: 200(L) x 100(W)mm
Colour: Warm Grey mix
Laid: Unbound construction, Stretcher bond
 - CONCRETE BLOCK PAVING TYPE S3.2**
Location: Adopted footpaths
Material: Small-format pre-cast concrete block paving with exposed natural stone aggregate
Size: 200(L) x 100(W)mm
Colour: Grey mix
Laid: Unbound construction, Stretcher bond
 - CONCRETE BLOCK PAVING TYPE S3.3**
Location: Raised table ramps and parking bays
Material: Small-format pre-cast concrete block paving with exposed natural stone aggregate
Size: 200(L) x 100(W)mm
Colour: Dark Grey
Laid: Unbound construction, Stretcher bond
 - CONCRETE BLOCK PAVING TYPE S4.1**
Location: Adopted footpaths
Material: Small-format pre-cast concrete block paving
Size: 100(L) x 100(W)mm
Colour: Grey mix
Laid: Unbound construction, Stretcher bond
 - CONCRETE BLOCK PAVING TYPE S4.2**
Location: Adopted lay-by's
Material: Small-format pre-cast tumbled concrete block paving
Size: 100(L) x 100(W)mm
Colour: Grey mix
Laid: Unbound construction, Stretcher bond
 - FEATURE CONCRETE BLOCK PAVING TYPE S5**
Location: Front garden areas to pedestrian routes & residential courtyards
Material: Tumbled pre-cast concrete block paving with exposed natural stone aggregate
Size: 200(L) x 100(W)mm
Colour: Buff/brown mix
Laid: Unbound construction, Stretcher bond
 - FEATURE GEOMETRIC CONCRETE BLOCK PAVING TYPE S6**
Location: Anglia Square central space
Material: Pre-cast concrete block paving with exposed aggregate surface. Kellen or equal approved.
Size: 200x300mm
Colour: Four shades of yellow and Black Contrasting
Laid: Triangular geometric shapes
 - FEATURE CONCRETE BLOCK PAVING TYPE S7**
Location: Anglia Square peripheral routes
Material: Small-format concrete slab paving
Size: 300(L) x 150(W)mm
Colour: Warm Grey
Laid: Unbound construction, Stretcher bond
 - RESIN BOUND AGGREGATE TYPE S8**
Location: Anglia Square central space
Material: Resin bound aggregate
Colour: Buff/brown mix
 - COBBLE STONE EDGING TYPE S7**
Location: Edging
Material: Natural stone, such as granite
Colour: Dark Grey
Laid: Bound construction, laying pattern as per manufacturer's recommendation.
 - FEATURE BANDING CONCRETE BLOCK PAVING TYPE S6**
Location: Main Entrances Block D
Material: Pre-cast concrete block paving with exposed aggregate surface. Kellen or equal approved.
Size: 200x300mm
Colour: Four shades of yellow and Black Contrasting
Laid: Linear banding

- ### KEY
- #### BOUNDARIES
- HYBRID APPLICATION BOUNDARY
 - LAND OWNED BY CT
 - DETAIL APPLICATION BOUNDARY
- #### FURNITURE
- TIMBER BENCH TYPE F1**
Location: Throughout. Steel-stone and integrating with planters
Material: Steel frame with hardwood seating surfaces
Owner: Integrated back and arm rests
 - FEATURE TIMBER BENCH TYPE F2**
Location: Anglia Square
Material: Steel frame with hardwood seating surfaces
Owner: Integrated back and arm rests
 - CYCLE STANDS TYPE F3**
Location: Throughout
Material: Sheffield hoop style cycle stands
Finish: Galvanneal and powder coated RAL TBC
 - PICNIC TABLES TYPE F4**
Location: Anglia Square
Material: Sheffield hoop style cycle stands
Finish: Galvanneal and powder coated RAL TBC
 - INFORMAL PLAY TYPE F5**
Location: In areas of soft landscape
Material: Informal play equipment such as stepping stones, logs, boulders etc
 - ELECTRIC SCOOTER PARKING TYPE F6**
Location: Throughout
Specification: System TBC. Docking and charging facilities for electric scooters
 - PUBLIC ART TYPE F7**
Location: Botolph Street
Specification: Design subject to consultation with local residents and artists
 - FEATURE CANOPY TYPE F8**
Location: Anglia Square
Specification: Bespoke canopy to provide shelter to Anglia Square with PV transparent panels to maximize light
 - BOLLARDS TYPE F9**
Location: As shown
Specification: Bollards to prevent vehicle access. Removable bollards provided on the tender / maintenance routes
 - TREE GRILLES TYPE F12**
Location: Throughout
Specification: Rectangular tree grilles in-filled with paving to match adjacent surface finish.
 - LOW BRICK WALL**
Location: Throughout the site on the residential courtyards.
Material: Solid brick wall
Other: Metal railing on the top
- #### SOFTWORKS
- LAWNS**
Species-rich grassland
 - PLANTING AREA**
Refer to softworks drawing and report for detailed breakdown of planting typologies
 - MIXED NATIVE HEDGING TYPE F6**
Mixed species native hedging
Maintained at 1.2m(h)
 - TREE PLANTING TYPE T1**
Refer to schedule for specification
 - MULTI-STEM TREE PLANTING TYPE T2**
Refer to schedule for specification
 - EXISTING TREE PLANTING TYPE T3**
To be retained
 - EXISTING TREE TO BE REMOVED**

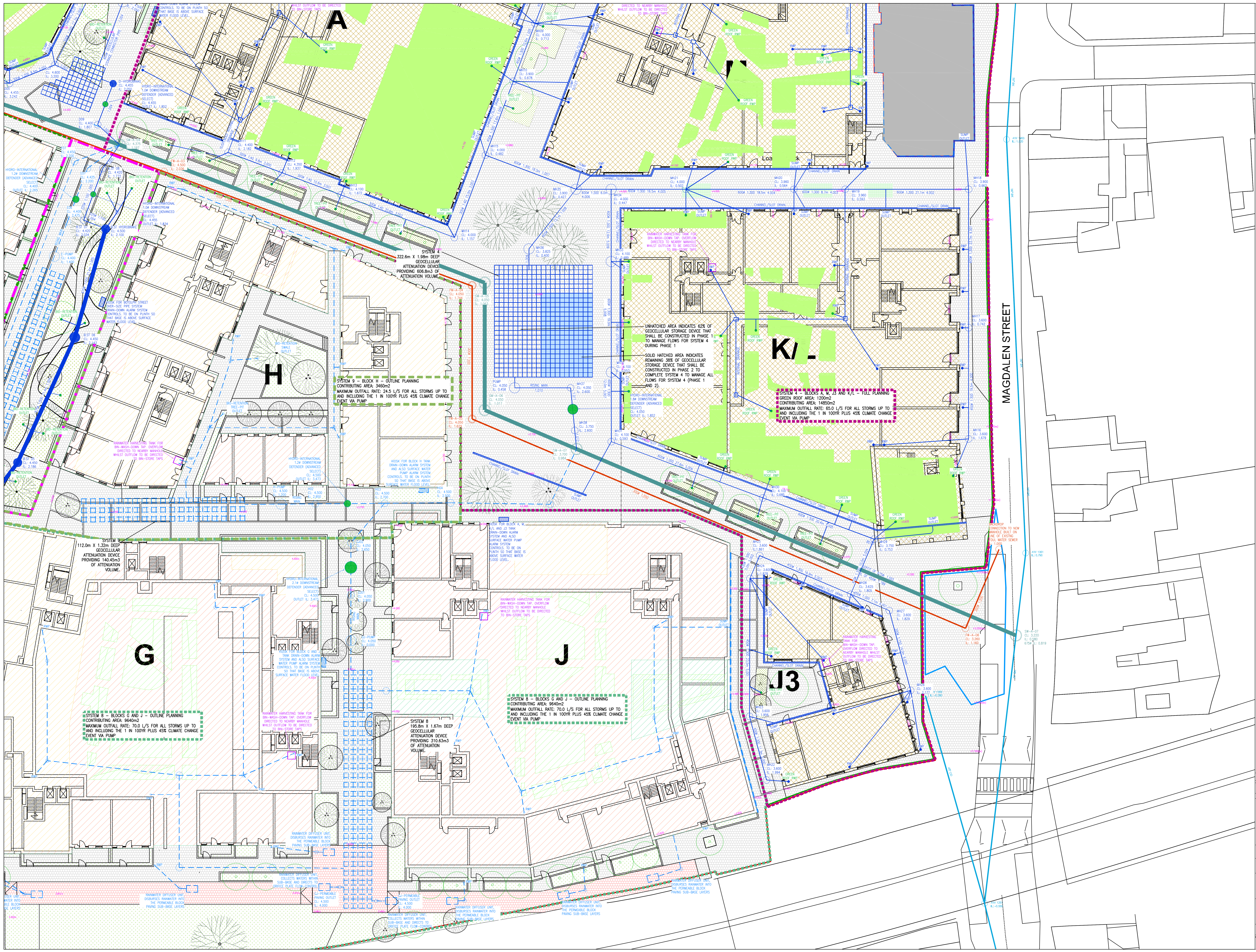
Revision	Date	Description	Drawn	Apprvd.
P05	06.01.23	PLANNING	JV	DF

Planit I.E. Limited
 E: info@planit-ie.com W: planit-ie.com
 MANCHESTER
 2 Back Grafton St., Atrincham, WA14 1DY
 T: 0161 928 9281

LEEDS
 No. 1 Aire Street, Leeds Station, Leeds, LS1 4PR
 T: 0113 824 6413
LIVERPOOL
 Temper 5.3, 12 Tithebarn Street, Liverpool, L2 2DT
 T: 0151 363 1230
LONDON
 Unit 6 Waterside, 44-48 Wharf Road, London, N1 7UX
 T: 0207 253 5678
STANDISH
 Standish Gatehouse, Stonehouse, Gloucestershire, GL10 3BZ
 T: 0145 360 7080

Client	Weston Homes		
Project	Anglia Square		
Dwg Title	Landscape Masterplan_RevC		
Created on	Created by	Approved by	
01.04.2022	JV	DF	
Scale	Size	Workstage	
1:500	A1	PLANNING	
Dwg No.	Suitability	Revision	
ANG-PLA-XX-XX-DR-L-0001	S4	P05	

Appendix O – Proposed Surface Water Drainage Layouts



- KEY**
- FULL PLANNING SURFACE WATER DRAINAGE SYSTEM
 - - - OUTLINE PLANNING SURFACE WATER DRAINAGE SYSTEM
 - PROPOSED ADOPTED SURFACE WATER SEWER DIVERSION
 - EXISTING ADOPTED SURFACE WATER SEWER TO REMAIN
 - - - PROPOSED ADOPTED FOUL WATER SEWER DIVERSION
 - PROPOSED FULL PLANNING ROOF AREA
 - PROPOSED FULL PLANNING GREEN ROOF SUDS AS PER PLANT DRAWING IN APPENDIX M.
 - PROPOSED FULL AND OUTLINE PLANNING HARDSTANDING/PAVING AS PER PLANT DRAWING IN APPENDIX N.
 - PROPOSED FULL PLANNING PERMEABLE BLOCK PAVING SUDS
 - PROPOSED FULL PLANNING BIOTENTION SYSTEM AND TREE-PIT SUDS
 - PROPOSED FULL PLANNING LANDSCAPED AREA
 - PROPOSED OUTLINE PLANNING GREEN ROOF (PODIUM) SUDS
 - PROPOSED OUTLINE PLANNING GREEN ROOF (TERRACE) SUDS
 - PROPOSED OUTLINE PLANNING GREEN ROOF (SEDUM) SUDS
 - PROPOSED OUTLINE PLANNING ROOF
 - PROPOSED OUTLINE PLANNING BIOTENTION SYSTEM AND TREE-PIT SUDS
 - PROPOSED OUTLINE PLANNING PERMEABLE BLOCK PAVING SUDS
 - PROPOSED OUTLINE PLANNING LANDSCAPED AREA

MAGDALEN STREET

SYSTEM 4 - BLOCK H - OUTLINE PLANNING
 CONTRIBUTING AREA: 3460m²
 MAXIMUM OUTFALL RATE: 24.5 L/S FOR ALL STORMS UP TO AND INCLUDING THE 1 IN 100YR PLUS 45% CLIMATE CHANGE EVENT VIA PUMP

UNHATCHED AREA INDICATES 62% OF GEOCELLULAR STORAGE DEVICE THAT SHALL BE CONSTRUCTED IN PHASE 1 TO MANAGE FLOWS FOR SYSTEM 4 DURING PHASE 1

SOLID HATCHED AREA INDICATES REMAINING 38% OF GEOCELLULAR STORAGE DEVICE THAT SHALL BE CONSTRUCTED IN PHASE 2 TO COMPLETE SYSTEM 4 TO MANAGE ALL FLOWS FOR SYSTEM 4 (PHASE 1 AND 2)

SYSTEM 5 - BLOCKS A, W, J AND K/J - FULL PLANNING
 GREEN ROOF AREA: 1200m²
 CONTRIBUTING AREA: 14650m²
 MAXIMUM OUTFALL RATE: 65.0 L/S FOR ALL STORMS UP TO AND INCLUDING THE 1 IN 100YR PLUS 45% CLIMATE CHANGE EVENT VIA PUMP

SYSTEM 3 - BLOCKS G AND J - OUTLINE PLANNING
 CONTRIBUTING AREA: 9640m²
 MAXIMUM OUTFALL RATE: 70.0 L/S FOR ALL STORMS UP TO AND INCLUDING THE 1 IN 100YR PLUS 45% CLIMATE CHANGE EVENT VIA PUMP

SYSTEM 8 - BLOCKS G AND J - OUTLINE PLANNING
 CONTRIBUTING AREA: 9640m²
 MAXIMUM OUTFALL RATE: 70.0 L/S FOR ALL STORMS UP TO AND INCLUDING THE 1 IN 100YR PLUS 45% CLIMATE CHANGE EVENT VIA PUMP

SYSTEM 8 - 195.8m X 1.67m DEEP GEOCELLULAR ATTENUATION DEVICE PROVIDING 310.63m³ OF ATTENUATION VOLUME.

NO.	DATE	BY	DESCRIPTION	CHK	APP
DRAWING STAGE: PLANNING APPLICATION					
Client: WESTON HOMES					
Project: ANGLIA SQUARE, NORWICH, NORFOLK					
Title: REV A SUBMISSION SURFACE WATER DRAINAGE LAYOUT SHEET 4 OF 4					
Scale: 1:200	Drawn: MD	Date: 25.01.2023			
Project No: 3831	Drawing No: DR-004-D				

PITT STREET

E

E/F

F

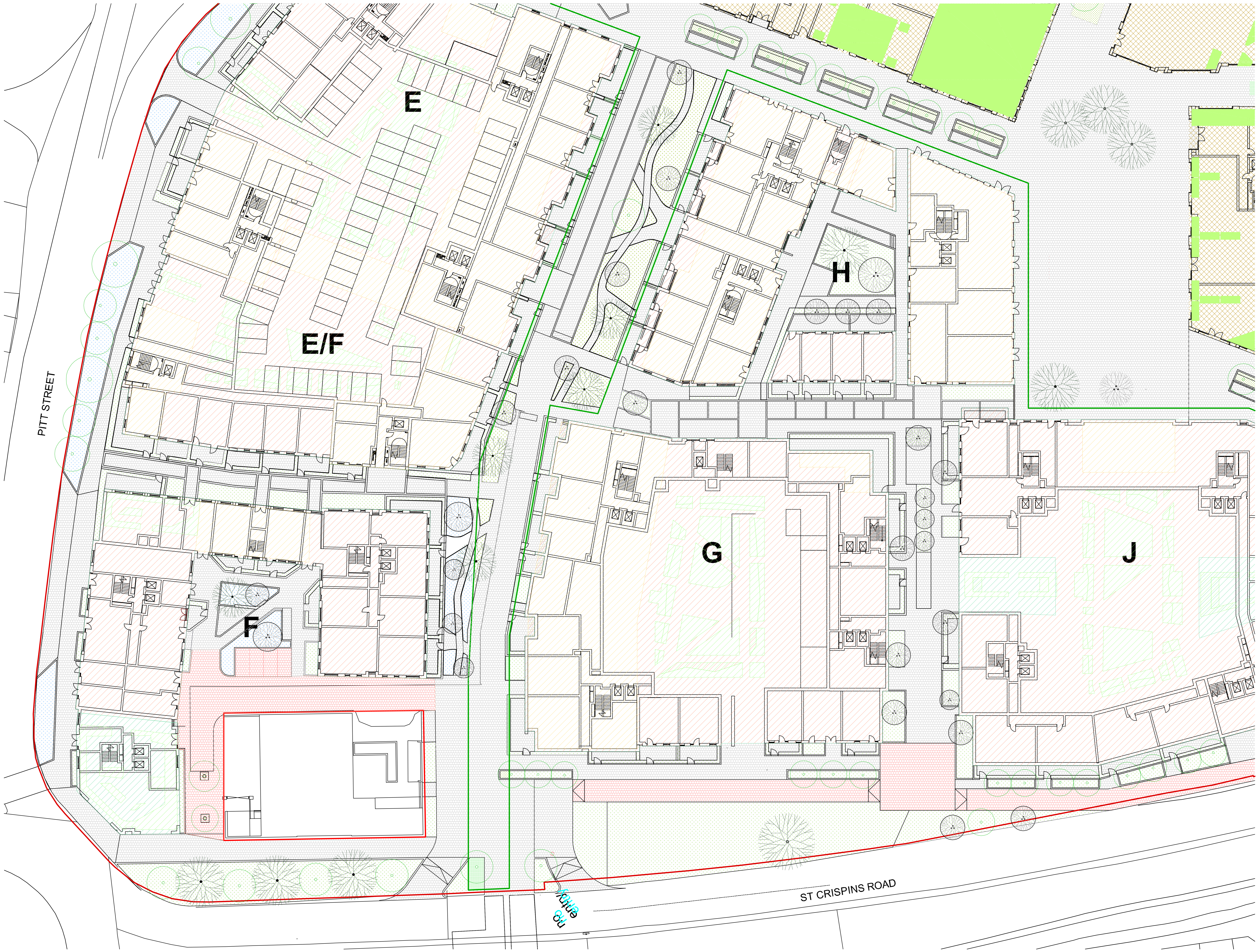
G

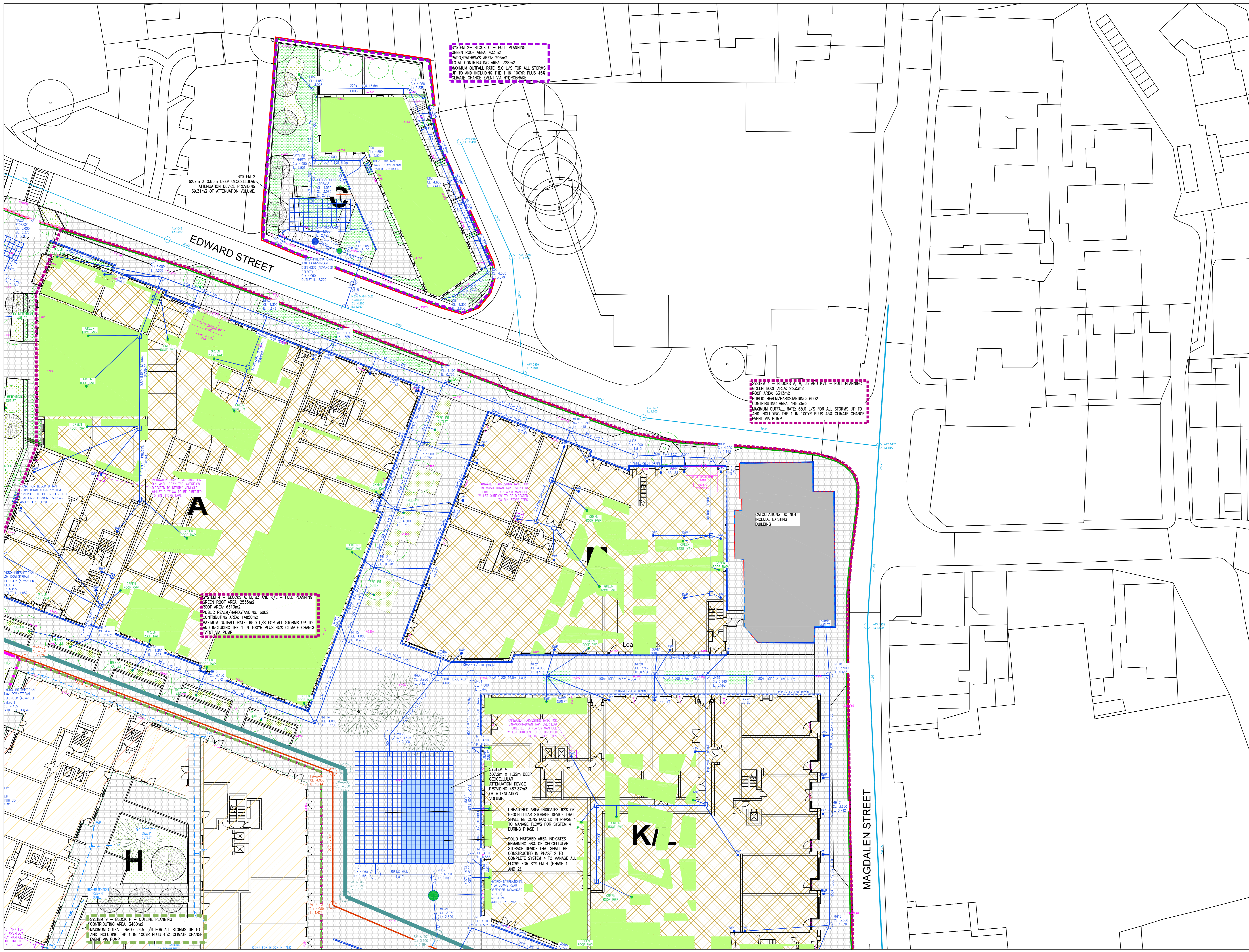
H

J

10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

ST CRISPINS ROAD





- KEY**
- FULL PLANNING SURFACE WATER DRAINAGE SYSTEM
 - OUTLINE PLANNING SURFACE WATER DRAINAGE SYSTEM
 - PROPOSED ADOPTED SURFACE WATER SEWER DIVERSION
 - EXISTING ADOPTED SURFACE WATER SEWER TO REMAIN
 - PROPOSED ADOPTED FOUL WATER SEWER DIVERSION
 - PROPOSED FULL PLANNING ROOF AREA
 - PROPOSED FULL PLANNING GREEN ROOF SUDS AS PER PLANT DRAWING IN APPENDIX M.
 - PROPOSED FULL AND OUTLINE PLANNING HARDSTANDING/PAVING AS PER PLANT DRAWING IN APPENDIX N.
 - PROPOSED FULL PLANNING PERMEABLE BLOCK PAVING SUDS
 - PROPOSED FULL PLANNING BIODEGRADATION SYSTEM AND TREE-PIT SUDS
 - PROPOSED FULL PLANNING LANDSCAPED AREA
 - PROPOSED OUTLINE PLANNING GREEN ROOF (PODIUM) SUDS
 - PROPOSED OUTLINE PLANNING GREEN ROOF (TERRACE) SUDS
 - PROPOSED OUTLINE PLANNING GREEN ROOF (SEDUM) SUDS
 - PROPOSED OUTLINE PLANNING ROOF
 - PROPOSED OUTLINE PLANNING BIODEGRADATION SYSTEM AND TREE-PIT SUDS
 - PROPOSED OUTLINE PLANNING PERMEABLE BLOCK PAVING SUDS
 - PROPOSED OUTLINE PLANNING LANDSCAPED AREA

SYSTEM 2 - BLOCK C - FULL PLANNING
 GREEN ROOF AREA: 433m²
 PATIO/PATHWAYS AREA: 295m²
 TOTAL CONTRIBUTING AREA: 728m²
 MAXIMUM OUTFALL RATE: 53.0 L/S FOR ALL STORMS UP TO AND INCLUDING THE 1 IN 100YR PLUS 45% CLIMATE CHANGE EVENT VIA HYDROPAK

SYSTEM 2
 62.7m x 0.66m DEEP GEOCELLULAR ATTENUATION DEVICE PROVIDING 39.31m³ OF ATTENUATION VOLUME

SYSTEM 4 - BLOCKS A, M, J5 AND R/L - FULL PLANNING
 GREEN ROOF AREA: 2535m²
 ROOF AREA: 6313m²
 PUBLIC REALM/HARDSTANDING: 6002
 CONTRIBUTING AREA: 14850m²
 MAXIMUM OUTFALL RATE: 65.0 L/S FOR ALL STORMS UP TO AND INCLUDING THE 1 IN 100YR PLUS 45% CLIMATE CHANGE EVENT VIA PUMP

SYSTEM 4 - BLOCKS A, M, J5 AND R/L - FULL PLANNING
 GREEN ROOF AREA: 2535m²
 ROOF AREA: 6313m²
 PUBLIC REALM/HARDSTANDING: 6002
 CONTRIBUTING AREA: 14850m²
 MAXIMUM OUTFALL RATE: 65.0 L/S FOR ALL STORMS UP TO AND INCLUDING THE 1 IN 100YR PLUS 45% CLIMATE CHANGE EVENT VIA PUMP

SYSTEM 4
 307.2m x 1.32m DEEP GEOCELLULAR ATTENUATION DEVICE PROVIDING 487.37m³ OF ATTENUATION VOLUME

UNHATCHED AREA INDICATES 60% OF GEOCELLULAR STORAGE DEVICE THAT SHALL BE CONSTRUCTED IN PHASE 1 TO MANAGE FLOWS FOR SYSTEM 4 DURING PHASE 1

SOLID HATCHED AREA INDICATES REMAINING 38% OF GEOCELLULAR STORAGE DEVICE THAT SHALL BE CONSTRUCTED IN PHASE 2 TO COMPLETE SYSTEM 4 TO MANAGE ALL FLOWS FOR SYSTEM 4 (PHASE 1 AND 2)

SYSTEM 9 - BLOCK H - OUTLINE PLANNING
 CONTRIBUTING AREA: 3480m²
 MAXIMUM OUTFALL RATE: 24.5 L/S FOR ALL STORMS UP TO AND INCLUDING THE 1 IN 100YR PLUS 45% CLIMATE CHANGE EVENT VIA PUMP

CALCULATIONS DO NOT INCLUDE EXISTING BUILDING

NO.	DATE	BY	DESCRIPTION	CHK	APP
DRAWING STAGE: PLANNING APPLICATION					
Client: Weston Homes					
Project: Anglia Square, Norwich, Norfolk					
Rev: REV A SUBMISSION SURFACE WATER DRAINAGE LAYOUT SHEET 2 OF 4					
SCALE: 1:200	DATE: 25.01.2023				
PROJECT NO: 3831	DRAWING NO: DR-002-D				



SYSTEM 1 - BLOCK B - FULL PLANNING
 GREEN ROOF AREA: 290m²
 PATIO/PATHWAYS AREA: 354m²
 PERMEABLE PAVING CAR PARK 1 AREA: 580m²
 TOTAL CONTRIBUTING AREA: 1790.5m²
 MAXIMUM OUTFALL RATE: 5.0 L/S FOR ALL STORMS UP TO AND INCLUDING THE 1 IN 100YR PLUS 45% CLIMATE CHANGE EVENT VIA HYDROBRAKE

SYSTEM 2 - BLOCK C - FULL PLANNING
 GREEN ROOF AREA: 433m²
 PATIO/PATHWAYS AREA: 295m²
 TOTAL CONTRIBUTING AREA: 728m²
 MAXIMUM OUTFALL RATE: 5.0 L/S FOR ALL STORMS UP TO AND INCLUDING THE 1 IN 100YR PLUS 45% CLIMATE CHANGE EVENT VIA HYDROBRAKE

SYSTEM 3 - BLOCK D - FULL PLANNING
 GREEN ROOF AREA: 610m²
 CONTRIBUTING AREA: 250m²
 MAXIMUM OUTFALL RATE: 12.5 L/S FOR ALL STORMS UP TO AND INCLUDING THE 1 IN 100YR PLUS 45% CLIMATE CHANGE EVENT VIA HYDROBRAKE

SYSTEM 4 - BLOCKS A AND B/L - FULL PLANNING
 GREEN ROOF AREA: 2535m²
 ROOF AREA: 6313m²
 PUBLIC REALM/HARDSTANDING: 6002
 CONTRIBUTING AREA: 14850m²
 MAXIMUM OUTFALL RATE: 65.0 L/S FOR ALL STORMS UP TO AND INCLUDING THE 1 IN 100YR PLUS 45% CLIMATE CHANGE EVENT VIA PUMP

PERMEABLE PAVING AREA 1 WITH MIN. 650mm THICK SUBBASE TO PROVIDE 39.02m³ OF ATTENUATION. FLOWS RESTRICTED USING 20mm ORIFICE PLATE FLOW CONTROL DEVICE.

SYSTEM 1
 35.2m X 1.32m DEEP GEOCELLULAR ATTENUATION DEVICE PROVIDING 44.14m³ OF ATTENUATION VOLUME.

SYSTEM 1
 PERMEABLE PAVING AREA 2 WITH MIN. 650mm THICK SUBBASE TO PROVIDE 8.117m³ OF ATTENUATION. FLOWS RESTRICTED USING 20mm ORIFICE PLATE FLOW CONTROL DEVICE.

SYSTEM 3
 TWO LINKED GEOCELLULAR ATTENUATION DEVICE WITH COMBINED SIZE OF 80m² X 1.52m DEEP PROVIDING 100.32m³ OF ATTENUATION VOLUME.

SYSTEM 6 - BLOCKS E - OUTLINE PLANNING
 CONTRIBUTING AREA: 842m²
 MAXIMUM OUTFALL RATE: 30.0 L/S FOR ALL STORMS UP TO AND INCLUDING THE 1 IN 100YR PLUS 45% CLIMATE CHANGE EVENT VIA PUMP

- KEY**
- FULL PLANNING SURFACE WATER DRAINAGE SYSTEM
 - OUTLINE PLANNING SURFACE WATER DRAINAGE SYSTEM
 - PROPOSED ADOPTED SURFACE WATER SEWER DIVERSION
 - EXISTING ADOPTED SURFACE WATER SEWER DIVERSION
 - PROPOSED ADOPTED FOUL WATER SEWER DIVERSION
 - PROPOSED FULL PLANNING ROOF AREA
 - PROPOSED FULL PLANNING GREEN ROOF SUDS AS PER PLANT DRAWING IN APPENDIX M.
 - PROPOSED FULL AND OUTLINE PLANNING HARDSTANDING/PAVING AS PER PLANT DRAWING IN APPENDIX N.
 - PROPOSED FULL PLANNING PERMEABLE BLOCK PAVING SUDS
 - PROPOSED FULL PLANNING BIOTENTATION SYSTEM AND TREE-PIT SUDS
 - PROPOSED FULL PLANNING LANDSCAPED AREA
 - PROPOSED FULL PLANNING GREEN ROOF (PODIUM) SUDS
 - PROPOSED OUTLINE PLANNING GREEN ROOF (TERRACE) SUDS
 - PROPOSED OUTLINE PLANNING GREEN ROOF (SEDUM) SUDS
 - PROPOSED OUTLINE PLANNING ROOF
 - PROPOSED OUTLINE PLANNING BIOTENTATION SYSTEM AND TREE-PIT SUDS
 - PROPOSED OUTLINE PLANNING PERMEABLE BLOCK PAVING SUDS
 - PROPOSED OUTLINE PLANNING LANDSCAPED AREA

NO.	DATE	BY	DESCRIPTION	CHK	APP
DRAWING STAGE: PLANNING APPLICATION					
Client: Weston Homes Ltd, 100, The Maltings, Stamford Road, North Walsham, Norfolk, NG12 5JG. Tel: 01508 811777. www.westonhomes.co.uk					
DRAWN BY: WESTON HOMES					
PROJECT: ANGLIA SQUARE, NORWICH, NORFOLK					
TITLE: REV A SUBMISSION SURFACE WATER DRAINAGE LAYOUT SHEET 1 OF 4					
SCALE: 1:200	DATE: 25.01.2023				
PROJECT NO: 3831	DR-001-D				

Appendix P – Hydraulic Model Outputs

Design Settings

Rainfall Methodology	FEH-13	Minimum Velocity (m/s)	1.00
Return Period (years)	5	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	0.750	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	3.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
B01	0.006	3.00	5.250	600	-152.400	927.000	0.650
B02	0.006	3.00	5.250	600	-133.600	927.000	0.838
B03	0.006	3.00	5.250	600	-115.100	927.000	1.023
B04	0.006	3.00	5.250	600	-99.600	927.000	1.178
B05	0.006	3.00	5.250	600	-88.100	927.000	1.293
B06	0.006	3.00	5.250	600	-72.700	963.800	0.650
B07	0.006	3.00	5.250	600	-72.700	945.600	0.832
B08	0.006	3.00	5.250	600	-72.700	927.000	1.447
B09	0.006	3.00	5.250	600	-63.000	944.800	0.650
B10	0.006	3.00	5.250	600	-63.000	939.200	0.720
DUMMY		3.00	5.200	600	-63.000	942.000	0.800
B-PP1	0.067	3.00	5.200	600	-63.000	932.000	0.850
B11	0.006	3.00	5.200	600	-63.000	927.000	1.569
B12	0.006	3.00	5.250	600	-44.800	927.000	1.740
B13	0.006	3.00	5.250	600	-36.000	927.000	1.800
B14	0.006	3.00	5.250	600	-33.600	933.700	1.250
B15	0.006	3.00	5.250	600	-33.600	927.000	1.816
B16	0.007	3.00	5.000	600	-24.800	927.000	1.625
B17			5.000	1200	-22.400	927.000	1.641
20		3.00	5.000	600	-18.400	942.000	0.600
B-PP2	0.015	3.00	5.000	600	-18.400	932.000	0.650
GEO AND HYDRO			5.000	1200	-18.400	927.000	2.200
ADOPT1			5.000	1200	-10.700	927.000	2.395
ADOPT2			5.000	1200	1.800	927.000	2.555
AW-0452			5.000	1200	18.500	927.000	2.840
ADOPT			5.000		28.500	927.000	2.907

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	B01	B02	18.800	0.600	4.600	4.412	0.188	100.0	225	3.24	50.0
1.001	B02	B03	18.500	0.600	4.412	4.227	0.185	100.0	225	3.48	50.0
1.002	B03	B04	15.500	0.600	4.227	4.072	0.155	100.0	225	3.67	50.0
1.003	B04	B05	11.500	0.600	4.072	3.957	0.115	100.0	225	3.82	50.0
1.004	B05	B08	15.400	0.600	3.957	3.803	0.154	100.0	225	4.02	50.0
2.000	B06	B07	18.200	0.600	4.600	4.418	0.182	100.0	150	3.30	50.0
2.001	B07	B08	18.600	0.600	4.418	3.878	0.540	34.4	150	3.48	50.0
1.005	B08	B11	9.700	0.600	3.803	3.631	0.172	56.4	225	4.11	50.0
3.000	B09	B10	5.600	0.600	4.600	4.530	0.070	80.0	150	3.08	50.0
3.001	B10	B11	12.200	0.600	4.530	3.706	0.824	14.8	150	3.16	50.0
4.000	DUMMY	B-PP1	10.000	0.600	4.400	4.350	0.050	200.0	150	3.24	50.0
4.001	B-PP1	B11	5.000	0.600	4.350	3.706	0.644	7.8	150	3.26	50.0
1.006	B11	B12	18.200	0.600	3.631	3.510	0.121	150.4	225	4.39	50.0
1.007	B12	B13	8.800	0.600	3.510	3.450	0.060	146.7	225	4.53	50.0
1.008	B13	B15	2.400	0.600	3.450	3.434	0.016	150.0	225	4.57	50.0
5.000	B14	B15	6.700	0.600	4.000	3.509	0.491	13.6	150	3.04	50.0
1.009	B15	B16	8.800	0.600	3.434	3.375	0.059	149.2	225	4.71	50.0
1.010	B16	B17	2.400	0.600	3.375	3.359	0.016	150.0	225	4.74	50.0
1.011	B17	GEO AND HYDRO	4.000	0.600	3.359	3.230	0.129	31.0	225	4.77	50.0
6.000	20	B-PP2	10.000	0.600	4.400	4.350	0.050	200.0	150	3.24	50.0
6.001	B-PP2	GEO AND HYDRO	5.000	0.600	4.350	3.890	0.460	10.9	150	3.26	50.0
1.012	GEO AND HYDRO	ADOPT1	7.700	0.600	2.800	2.605	0.195	39.5	150	4.85	50.0
1.013	ADOPT1	ADOPT2	12.500	0.600	2.605	2.445	0.160	78.1	150	5.03	50.0
1.014	ADOPT2	AW-0452	16.700	0.600	2.445	2.235	0.210	79.5	150	5.28	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.000	1.307	52.0	0.8	0.425	0.613	0.006	0.0
1.001	1.307	52.0	1.6	0.613	0.798	0.012	0.0
1.002	1.307	52.0	2.4	0.798	0.953	0.018	0.0
1.003	1.307	52.0	3.3	0.953	1.068	0.024	0.0
1.004	1.307	52.0	4.1	1.068	1.222	0.030	0.0
2.000	1.005	17.8	0.8	0.500	0.682	0.006	0.0
2.001	1.721	30.4	1.6	0.682	1.222	0.012	0.0
1.005	1.745	69.4	6.5	1.222	1.344	0.048	0.0
3.000	1.125	19.9	0.8	0.500	0.570	0.006	0.0
3.001	2.631	46.5	1.6	0.570	1.344	0.012	0.0
4.000	0.707	12.5	0.0	0.650	0.700	0.000	0.0
4.001	3.638	64.3	9.1	0.700	1.344	0.067	0.0
1.006	1.064	42.3	18.0	1.344	1.515	0.133	0.0
1.007	1.077	42.8	18.8	1.515	1.575	0.139	0.0
1.008	1.065	42.3	19.7	1.575	1.591	0.145	0.0
5.000	2.741	48.4	0.8	1.100	1.591	0.006	0.0
1.009	1.068	42.5	21.3	1.591	1.400	0.157	0.0
1.010	1.065	42.3	22.2	1.400	1.416	0.164	0.0
1.011	2.358	93.7	22.2	1.416	1.545	0.164	0.0
6.000	0.707	12.5	0.0	0.450	0.500	0.000	0.0
6.001	3.073	54.3	2.0	0.500	0.960	0.015	0.0
1.012	1.606	28.4	24.3	2.050	2.245	0.179	0.0
1.013	1.138	20.1	24.3	2.245	2.405	0.179	0.0
1.014	1.128	19.9	24.3	2.405	2.615	0.179	0.0

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.015	AW-0452	ADOPT	10.000	0.600	2.160	2.093	0.067	149.3	225	5.44	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.015	1.068	42.5	24.3	2.615	2.682	0.179	0.0

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	18.800	100.0	225	1 STANDARD	5.250	4.600	0.425	5.250	4.412	0.613
1.001	18.500	100.0	225	1 STANDARD	5.250	4.412	0.613	5.250	4.227	0.798
1.002	15.500	100.0	225	1 STANDARD	5.250	4.227	0.798	5.250	4.072	0.953
1.003	11.500	100.0	225	1 STANDARD	5.250	4.072	0.953	5.250	3.957	1.068
1.004	15.400	100.0	225	1 STANDARD	5.250	3.957	1.068	5.250	3.803	1.222
2.000	18.200	100.0	150	1 STANDARD	5.250	4.600	0.500	5.250	4.418	0.682
2.001	18.600	34.4	150	1 STANDARD	5.250	4.418	0.682	5.250	3.878	1.222
1.005	9.700	56.4	225	1 STANDARD	5.250	3.803	1.222	5.200	3.631	1.344
3.000	5.600	80.0	150	1 STANDARD	5.250	4.600	0.500	5.250	4.530	0.570
3.001	12.200	14.8	150	1 STANDARD	5.250	4.530	0.570	5.200	3.706	1.344
4.000	10.000	200.0	150	1 STANDARD	5.200	4.400	0.650	5.200	4.350	0.700
4.001	5.000	7.8	150	1 STANDARD	5.200	4.350	0.700	5.200	3.706	1.344
1.006	18.200	150.4	225	1 STANDARD	5.200	3.631	1.344	5.250	3.510	1.515
1.007	8.800	146.7	225	1 STANDARD	5.250	3.510	1.515	5.250	3.450	1.575
1.008	2.400	150.0	225	1 STANDARD	5.250	3.450	1.575	5.250	3.434	1.591
5.000	6.700	13.6	150	1 STANDARD	5.250	4.000	1.100	5.250	3.509	1.591
1.009	8.800	149.2	225	1 STANDARD	5.250	3.434	1.591	5.000	3.375	1.400
1.010	2.400	150.0	225	1 STANDARD	5.000	3.375	1.400	5.000	3.359	1.416
1.011	4.000	31.0	225	1 STANDARD	5.000	3.359	1.416	5.000	3.230	1.545

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	B01	600	Manhole	1 STANDARD	B02	600	Manhole	1 STANDARD
1.001	B02	600	Manhole	1 STANDARD	B03	600	Manhole	1 STANDARD
1.002	B03	600	Manhole	1 STANDARD	B04	600	Manhole	1 STANDARD
1.003	B04	600	Manhole	1 STANDARD	B05	600	Manhole	1 STANDARD
1.004	B05	600	Manhole	1 STANDARD	B08	600	Manhole	1 STANDARD
2.000	B06	600	Manhole	1 STANDARD	B07	600	Manhole	1 STANDARD
2.001	B07	600	Manhole	1 STANDARD	B08	600	Manhole	1 STANDARD
1.005	B08	600	Manhole	1 STANDARD	B11	600	Manhole	1 STANDARD
3.000	B09	600	Manhole	1 STANDARD	B10	600	Manhole	1 STANDARD
3.001	B10	600	Manhole	1 STANDARD	B11	600	Manhole	1 STANDARD
4.000	DUMMY	600	Manhole	1 STANDARD	B-PP1	600	Manhole	1 STANDARD
4.001	B-PP1	600	Manhole	1 STANDARD	B11	600	Manhole	1 STANDARD
1.006	B11	600	Manhole	1 STANDARD	B12	600	Manhole	1 STANDARD
1.007	B12	600	Manhole	1 STANDARD	B13	600	Manhole	1 STANDARD
1.008	B13	600	Manhole	1 STANDARD	B15	600	Manhole	1 STANDARD
5.000	B14	600	Manhole	1 STANDARD	B15	600	Manhole	1 STANDARD
1.009	B15	600	Manhole	1 STANDARD	B16	600	Manhole	1 STANDARD
1.010	B16	600	Manhole	1 STANDARD	B17	1200	Manhole	1 STANDARD
1.011	B17	1200	Manhole	1 STANDARD	GEO AND HYDRO	1200	Manhole	1 STANDARD

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
6.000	10.000	200.0	150	1 STANDARD	5.000	4.400	0.450	5.000	4.350	0.500
6.001	5.000	10.9	150	1 STANDARD	5.000	4.350	0.500	5.000	3.890	0.960
1.012	7.700	39.5	150	1 STANDARD	5.000	2.800	2.050	5.000	2.605	2.245
1.013	12.500	78.1	150	1 STANDARD	5.000	2.605	2.245	5.000	2.445	2.405
1.014	16.700	79.5	150	1 STANDARD	5.000	2.445	2.405	5.000	2.235	2.615
1.015	10.000	149.3	225	1 STANDARD	5.000	2.160	2.615	5.000	2.093	2.682

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
6.000	20	600	Manhole	1 STANDARD	B-PP2	600	Manhole	1 STANDARD
6.001	B-PP2	600	Manhole	1 STANDARD	GEO AND HYDRO	1200	Manhole	1 STANDARD
1.012	GEO AND HYDRO	1200	Manhole	1 STANDARD	ADOPT1	1200	Manhole	1 STANDARD
1.013	ADOPT1	1200	Manhole	1 STANDARD	ADOPT2	1200	Manhole	1 STANDARD
1.014	ADOPT2	1200	Manhole	1 STANDARD	AW-0452	1200	Manhole	1 STANDARD
1.015	AW-0452	1200	Manhole	1 STANDARD	ADOPT		Manhole	1 STANDARD

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
B01	-152.400	927.000	5.250	0.650	600				
						0	1.000	4.600	225
B02	-133.600	927.000	5.250	0.838	600				
						0	1.001	4.412	225
B03	-115.100	927.000	5.250	1.023	600				
						0	1.002	4.227	225
B04	-99.600	927.000	5.250	1.178	600				
						0	1.003	4.072	225
B05	-88.100	927.000	5.250	1.293	600				
						0	1.004	3.957	225
B06	-72.700	963.800	5.250	0.650	600				
						0	2.000	4.600	150
B07	-72.700	945.600	5.250	0.832	600				
						0	2.001	4.418	150
B08	-72.700	927.000	5.250	1.447	600				
						1	2.001	3.878	150
						2	1.004	3.803	225
						0	1.005	3.803	225

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
B09	-63.000	944.800	5.250	0.650	600				
						0	3.000	4.600	150
B10	-63.000	939.200	5.250	0.720	600		1	3.000	4.530
						0	3.001	4.530	150
DUMMY	-63.000	942.000	5.200	0.800	600				
						0	4.000	4.400	150
B-PP1	-63.000	932.000	5.200	0.850	600		1	4.000	4.350
						0	4.001	4.350	150
B11	-63.000	927.000	5.200	1.569	600		1	4.001	3.706
						2	3.001	3.706	150
						3	1.005	3.631	225
						0	1.006	3.631	225
B12	-44.800	927.000	5.250	1.740	600		1	1.006	3.510
						0	1.007	3.510	225
B13	-36.000	927.000	5.250	1.800	600		1	1.007	3.450
						0	1.008	3.450	225
B14	-33.600	933.700	5.250	1.250	600				
						0	5.000	4.000	150
B15	-33.600	927.000	5.250	1.816	600		1	5.000	3.509
						2	1.008	3.434	225
						0	1.009	3.434	225
B16	-24.800	927.000	5.000	1.625	600		1	1.009	3.375
						0	1.010	3.375	225
B17	-22.400	927.000	5.000	1.641	1200		1	1.010	3.359
						0	1.011	3.359	225
20	-18.400	942.000	5.000	0.600	600				
						0	6.000	4.400	150
B-PP2	-18.400	932.000	5.000	0.650	600		1	6.000	4.350
						0	6.001	4.350	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
GEO AND HYDRO	-18.400	927.000	5.000	2.200	1200	1	6.001	3.890	150
						2	1.011	3.230	225
						0	1.012	2.800	150
ADOPT1	-10.700	927.000	5.000	2.395	1200	1	1.012	2.605	150
ADOPT2	1.800	927.000	5.000	2.555	1200	0	1.013	2.605	150
						1	1.013	2.445	150
AW-0452	18.500	927.000	5.000	2.840	1200	0	1.014	2.445	150
						1	1.014	2.235	150
ADOPT	28.500	927.000	5.000	2.907		0	1.015	2.160	225
						1	1.015	2.093	225

Simulation Settings

Rainfall Methodology	FEH-13	Analysis Speed	Normal	Additional Storage (m³/ha)	0.0
Summer CV	0.750	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	0.840	Drain Down Time (mins)	1440	Check Discharge Volume	x

Storm Durations

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

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
30	40	0	0
100	0	0	0
100	45	0	0

Node B-PP1 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.350	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.026		

Node B-PP2 Online Orifice Control

Flap Valve	x	Invert Level (m)	4.350	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.020		

Node GEO AND HYDRO Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	2.800	Product Number	CTL-SHE-0101-5000-1320-5000
Design Depth (m)	1.320	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	5.0	Min Node Diameter (mm)	1200

Node B-PP1 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.350	Slope (1:X)	500.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	616	Depth (m)	
Safety Factor	2.0	Width (m)	21.800	Inf Depth (m)	
Porosity	0.30	Length (m)	21.800		

Node B-PP2 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	4.350	Slope (1:X)	500.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	256	Depth (m)	
Safety Factor	2.0	Width (m)	12.200	Inf Depth (m)	
Porosity	0.30	Length (m)	12.200		

Node GEO AND HYDRO Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	2.800
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	138

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	35.2	0.0	1.320	35.2	0.0	1.321	0.0	0.0

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.96%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute summer	B01	9	4.622	0.022	1.1	0.0062	0.0000	OK
15 minute summer	B02	10	4.442	0.030	2.1	0.0084	0.0000	OK
15 minute summer	B03	10	4.263	0.036	3.0	0.0103	0.0000	OK
15 minute summer	B04	10	4.115	0.043	3.9	0.0120	0.0000	OK
15 minute summer	B05	10	4.004	0.047	4.8	0.0133	0.0000	OK
15 minute summer	B06	9	4.625	0.025	1.1	0.0070	0.0000	OK
15 minute summer	B07	10	4.444	0.026	2.1	0.0074	0.0000	OK
15 minute summer	B08	10	3.854	0.051	7.7	0.0144	0.0000	OK
15 minute summer	B09	9	4.625	0.025	1.1	0.0069	0.0000	OK
15 minute summer	B10	9	4.552	0.022	2.1	0.0062	0.0000	OK
240 minute winter	DUMMY	220	4.433	0.033	0.0	0.0093	0.0000	OK
240 minute winter	B-PP1	220	4.433	0.083	2.1	8.6892	0.0000	OK
15 minute summer	B11	10	3.712	0.081	10.8	0.0229	0.0000	OK
15 minute summer	B12	10	3.599	0.089	11.8	0.0251	0.0000	OK
15 minute summer	B13	10	3.553	0.103	12.5	0.0292	0.0000	OK
15 minute summer	B14	9	4.016	0.016	1.1	0.0045	0.0000	OK
15 minute summer	B15	10	3.532	0.098	14.1	0.0276	0.0000	OK
15 minute summer	B16	10	3.471	0.096	15.0	0.0273	0.0000	OK
15 minute summer	B17	10	3.428	0.069	14.8	0.0782	0.0000	OK
15 minute summer	20	1	4.400	0.000	0.0	0.0000	0.0000	OK
240 minute winter	B-PP2	172	4.396	0.046	0.5	1.5173	0.0000	OK
30 minute winter	GEO AND HYDRO	26	2.960	0.160	11.5	5.5271	0.0000	SURCHARGED
30 minute winter	ADOPT1	26	2.652	0.047	4.0	0.0530	0.0000	OK
30 minute winter	ADOPT2	27	2.490	0.045	4.0	0.0514	0.0000	OK
30 minute summer	AW-0452	22	2.405	0.245	3.6	0.2768	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute summer	B01	1.000	B02	1.0	0.412	0.020	0.0468	
15 minute summer	B02	1.001	B03	2.0	0.546	0.038	0.0668	
15 minute summer	B03	1.002	B04	3.0	0.636	0.057	0.0723	
15 minute summer	B04	1.003	B05	3.9	0.701	0.075	0.0644	
15 minute summer	B05	1.004	B08	4.8	0.761	0.093	0.0980	
15 minute summer	B06	2.000	B07	1.0	0.523	0.057	0.0355	
15 minute summer	B07	2.001	B08	2.0	0.965	0.065	0.0381	
15 minute summer	B08	1.005	B11	7.8	0.803	0.112	0.0947	
15 minute summer	B09	3.000	B10	1.0	0.607	0.053	0.0097	
15 minute summer	B10	3.001	B11	2.1	1.308	0.044	0.0192	
30 minute winter	DUMMY	4.000	B-PP1	-0.1	-0.026	-0.005	0.0352	
240 minute winter	B-PP1	4.001	B11	0.4	0.976	0.006	0.0019	
15 minute summer	B11	1.006	B12	10.9	0.797	0.257	0.2483	
15 minute summer	B12	1.007	B13	11.6	0.718	0.270	0.1419	
15 minute summer	B13	1.008	B15	12.2	0.723	0.289	0.0411	
15 minute summer	B14	5.000	B15	1.1	1.099	0.022	0.0084	
15 minute summer	B15	1.009	B16	13.9	0.852	0.327	0.1440	
15 minute summer	B16	1.010	B17	14.8	1.115	0.348	0.0319	
15 minute summer	B17	1.011	GEO AND HYDRO	14.6	1.564	0.156	0.0375	
15 minute summer	20	6.000	B-PP2	0.0	0.000	0.000	0.0128	
240 minute winter	B-PP2	6.001	GEO AND HYDRO	0.2	0.680	0.003	0.0012	
30 minute winter	GEO AND HYDRO	1.012	ADOPT1	4.0	0.966	0.141	0.0319	
30 minute winter	ADOPT1	1.013	ADOPT2	4.0	0.868	0.198	0.0575	
30 minute winter	ADOPT2	1.014	AW-0452	4.0	0.717	0.200	0.1846	
15 minute summer	AW-0452	1.015	ADOPT	5.7	0.142	0.133	0.3977	10.4

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.96%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute summer	ADOPT	1	2.393	0.300	5.7	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
----------------------	---------	------	---------	---------------	----------------	----------	----------------------------	---------------------------------

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.96%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute summer	B01	9	4.635	0.035	2.9	0.0100	0.0000	OK
15 minute summer	B02	9	4.461	0.049	5.7	0.0139	0.0000	OK
15 minute summer	B03	10	4.288	0.061	8.3	0.0172	0.0000	OK
15 minute summer	B04	10	4.145	0.073	10.7	0.0208	0.0000	OK
15 minute summer	B05	10	4.038	0.081	13.3	0.0231	0.0000	OK
15 minute summer	B06	9	4.641	0.041	2.9	0.0115	0.0000	OK
15 minute summer	B07	9	4.462	0.044	5.7	0.0124	0.0000	OK
15 minute summer	B08	10	3.898	0.095	21.4	0.0269	0.0000	OK
15 minute summer	B09	9	4.641	0.041	2.9	0.0116	0.0000	OK
15 minute summer	B10	9	4.565	0.035	5.7	0.0100	0.0000	OK
360 minute winter	DUMMY	336	4.535	0.135	0.0	0.0381	0.0000	OK
360 minute winter	B-PP1	336	4.535	0.185	3.7	23.2442	0.0000	SURCHARGED
15 minute summer	B11	10	3.784	0.153	29.7	0.0432	0.0000	OK
15 minute summer	B12	10	3.705	0.195	32.4	0.0552	0.0000	OK
15 minute summer	B13	10	3.665	0.215	34.0	0.0608	0.0000	OK
15 minute summer	B14	9	4.025	0.025	2.9	0.0070	0.0000	OK
15 minute summer	B15	10	3.632	0.198	38.7	0.0561	0.0000	OK
15 minute summer	B16	10	3.553	0.178	41.2	0.0503	0.0000	OK
15 minute summer	B17	10	3.489	0.130	40.9	0.1471	0.0000	OK
180 minute winter	20	148	4.454	0.054	0.0	0.0153	0.0000	OK
180 minute winter	B-PP2	148	4.454	0.104	1.4	4.0744	0.0000	OK
60 minute winter	GEO AND HYDRO	50	3.322	0.522	19.9	18.0410	0.0000	SURCHARGED
30 minute winter	ADOPT1	23	2.658	0.053	5.0	0.0599	0.0000	OK
30 minute winter	ADOPT2	42	2.496	0.051	5.0	0.0578	0.0000	OK
30 minute summer	AW-0452	18	2.402	0.242	5.0	0.2742	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute summer	B01	1.000	B02	2.8	0.544	0.054	0.0971	
15 minute summer	B02	1.001	B03	5.4	0.721	0.104	0.1385	
15 minute summer	B03	1.002	B04	8.1	0.818	0.156	0.1539	
15 minute summer	B04	1.003	B05	10.9	0.898	0.209	0.1390	
15 minute summer	B05	1.004	B08	13.6	0.941	0.261	0.2222	
15 minute summer	B06	2.000	B07	2.8	0.685	0.157	0.0742	
15 minute summer	B07	2.001	B08	5.4	1.282	0.177	0.0783	
15 minute summer	B08	1.005	B11	21.7	0.970	0.313	0.2161	
15 minute summer	B09	3.000	B10	2.8	0.805	0.142	0.0197	
15 minute summer	B10	3.001	B11	5.6	1.554	0.121	0.0742	
15 minute summer	DUMMY	4.000	B-PP1	-0.5	-0.116	-0.039	0.0800	
360 minute winter	B-PP1	4.001	B11	0.6	1.119	0.009	0.0026	
15 minute summer	B11	1.006	B12	29.9	0.931	0.706	0.5938	
15 minute summer	B12	1.007	B13	31.5	0.830	0.736	0.3331	
15 minute summer	B13	1.008	B15	33.7	0.882	0.796	0.0914	
15 minute summer	B14	5.000	B15	2.9	1.184	0.059	0.0577	
15 minute summer	B15	1.009	B16	38.3	1.080	0.901	0.3112	
15 minute summer	B16	1.010	B17	40.9	1.413	0.966	0.0689	
15 minute summer	B17	1.011	GEO AND HYDRO	40.6	1.960	0.433	0.0829	
30 minute summer	20	6.000	B-PP2	-0.2	-0.061	-0.015	0.0537	
180 minute winter	B-PP2	6.001	GEO AND HYDRO	0.3	0.776	0.005	0.0016	
30 minute winter	GEO AND HYDRO	1.012	ADOPT1	5.0	1.021	0.176	0.0378	
30 minute winter	ADOPT1	1.013	ADOPT2	5.0	0.922	0.249	0.0678	
30 minute winter	ADOPT2	1.014	AW-0452	5.0	0.704	0.251	0.1912	
15 minute winter	AW-0452	1.015	ADOPT	7.7	0.195	0.182	0.3977	31.5

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.96%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute summer	ADOPT	1	2.393	0.300	7.3	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
----------------------	---------	------	---------	---------------	----------------	----------	----------------------------	---------------------------------

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.96%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute summer	B01	9	4.641	0.041	4.0	0.0117	0.0000	OK
15 minute summer	B02	9	4.470	0.058	7.9	0.0166	0.0000	OK
15 minute summer	B03	9	4.300	0.073	11.5	0.0207	0.0000	OK
15 minute summer	B04	10	4.161	0.089	15.0	0.0252	0.0000	OK
15 minute summer	B05	10	4.054	0.097	18.6	0.0275	0.0000	OK
15 minute summer	B06	9	4.648	0.048	4.0	0.0137	0.0000	OK
15 minute summer	B07	9	4.471	0.053	7.9	0.0149	0.0000	OK
15 minute summer	B08	10	3.960	0.157	30.8	0.0445	0.0000	OK
15 minute summer	B09	9	4.649	0.049	4.0	0.0138	0.0000	OK
15 minute summer	B10	9	4.572	0.042	7.9	0.0118	0.0000	OK
360 minute winter	DUMMY	344	4.612	0.212	0.1	0.0600	0.0000	SURCHARGED
360 minute winter	B-PP1	344	4.612	0.262	5.2	34.3112	0.0000	SURCHARGED
15 minute summer	B11	10	3.940	0.309	40.5	0.0874	0.0000	SURCHARGED
15 minute summer	B12	10	3.827	0.317	38.9	0.0898	0.0000	SURCHARGED
15 minute summer	B13	10	3.752	0.302	41.9	0.0855	0.0000	SURCHARGED
15 minute summer	B14	9	4.029	0.029	4.0	0.0082	0.0000	OK
15 minute summer	B15	10	3.708	0.274	48.7	0.0774	0.0000	SURCHARGED
60 minute winter	B16	59	3.603	0.228	27.4	0.0646	0.0000	SURCHARGED
60 minute winter	B17	59	3.603	0.244	27.5	0.2758	0.0000	SURCHARGED
240 minute winter	20	188	4.498	0.098	0.0	0.0278	0.0000	OK
240 minute winter	B-PP2	188	4.498	0.148	1.6	6.0396	0.0000	OK
60 minute winter	GEO AND HYDRO	59	3.602	0.802	27.7	27.7394	0.0000	SURCHARGED
15 minute summer	ADOPT1	13	2.658	0.053	5.0	0.0599	0.0000	OK
30 minute winter	ADOPT2	81	2.496	0.051	5.0	0.0578	0.0000	OK
15 minute winter	AW-0452	11	2.410	0.250	5.0	0.2823	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute summer	B01	1.000	B02	3.9	0.593	0.075	0.1239	
15 minute summer	B02	1.001	B03	7.5	0.781	0.145	0.1792	
15 minute summer	B03	1.002	B04	11.3	0.878	0.217	0.1993	
15 minute summer	B04	1.003	B05	15.1	0.977	0.291	0.1781	
15 minute summer	B05	1.004	B08	19.8	0.977	0.381	0.3545	
15 minute summer	B06	2.000	B07	3.9	0.745	0.218	0.0948	
15 minute summer	B07	2.001	B08	7.5	1.399	0.248	0.1403	
15 minute winter	B08	1.005	B11	28.9	0.969	0.417	0.3343	
15 minute summer	B09	3.000	B10	3.9	0.879	0.197	0.0250	
15 minute summer	B10	3.001	B11	7.8	1.523	0.168	0.1303	
15 minute winter	DUMMY	4.000	B-PP1	-0.7	-0.130	-0.057	0.1357	
360 minute winter	B-PP1	4.001	B11	0.7	1.183	0.011	0.0030	
15 minute summer	B11	1.006	B12	36.7	0.923	0.868	0.7238	
15 minute summer	B12	1.007	B13	39.5	0.994	0.923	0.3500	
15 minute summer	B13	1.008	B15	42.2	1.062	0.997	0.0955	
15 minute summer	B14	5.000	B15	4.0	1.117	0.082	0.0670	
15 minute summer	B15	1.009	B16	48.5	1.220	1.143	0.3475	
15 minute summer	B16	1.010	B17	52.6	1.499	1.241	0.0821	
15 minute summer	B17	1.011	GEO AND HYDRO	52.4	2.065	0.559	0.1013	
15 minute summer	20	6.000	B-PP2	-0.4	-0.088	-0.029	0.0637	
240 minute winter	B-PP2	6.001	GEO AND HYDRO	0.3	0.821	0.006	0.0019	
30 minute winter	GEO AND HYDRO	1.012	ADOPT1	5.0	1.021	0.176	0.0378	
60 minute summer	ADOPT1	1.013	ADOPT2	5.0	0.922	0.249	0.0678	
30 minute winter	ADOPT2	1.014	AW-0452	5.0	0.709	0.251	0.1912	
30 minute winter	AW-0452	1.015	ADOPT	6.9	0.174	0.163	0.3977	58.2

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.96%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute summer	ADOPT	1	2.393	0.300	6.3	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
----------------------	---------	------	---------	---------------	----------------	----------	----------------------------	---------------------------------

Results for 100 year Critical Storm Duration. Lowest mass balance: 99.96%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute summer	B01	9	4.640	0.040	3.8	0.0114	0.0000	OK
15 minute summer	B02	9	4.468	0.056	7.5	0.0160	0.0000	OK
15 minute summer	B03	9	4.297	0.070	10.8	0.0199	0.0000	OK
15 minute summer	B04	10	4.157	0.085	14.0	0.0241	0.0000	OK
15 minute summer	B05	10	4.052	0.095	17.3	0.0269	0.0000	OK
15 minute summer	B06	9	4.647	0.047	3.8	0.0133	0.0000	OK
15 minute summer	B07	9	4.469	0.051	7.4	0.0144	0.0000	OK
15 minute summer	B08	10	3.920	0.117	27.7	0.0332	0.0000	OK
15 minute summer	B09	9	4.647	0.047	3.8	0.0134	0.0000	OK
15 minute summer	B10	9	4.570	0.040	7.5	0.0115	0.0000	OK
480 minute winter	DUMMY	456	4.609	0.209	0.0	0.0592	0.0000	SURCHARGED
480 minute winter	B-PP1	400	4.609	0.259	4.1	33.8852	0.0000	SURCHARGED
15 minute summer	B11	10	3.906	0.275	37.6	0.0779	0.0000	SURCHARGED
15 minute summer	B12	10	3.803	0.293	38.2	0.0828	0.0000	SURCHARGED
15 minute summer	B13	10	3.732	0.282	41.0	0.0798	0.0000	SURCHARGED
15 minute summer	B14	9	4.028	0.028	3.8	0.0080	0.0000	OK
15 minute summer	B15	10	3.690	0.256	46.9	0.0725	0.0000	SURCHARGED
15 minute summer	B16	10	3.581	0.206	50.1	0.0582	0.0000	OK
60 minute winter	B17	59	3.544	0.185	26.2	0.2091	0.0000	OK
360 minute winter	20	272	4.496	0.096	0.0	0.0272	0.0000	OK
360 minute winter	B-PP2	272	4.496	0.146	1.2	5.9494	0.0000	OK
60 minute winter	GEO AND HYDRO	59	3.543	0.743	26.4	25.7028	0.0000	SURCHARGED
30 minute summer	ADOPT1	20	2.658	0.053	5.0	0.0599	0.0000	OK
30 minute winter	ADOPT2	71	2.496	0.051	5.0	0.0578	0.0000	OK
30 minute winter	AW-0452	15	2.404	0.244	5.0	0.2760	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute summer	B01	1.000	B02	3.7	0.585	0.070	0.1183	
15 minute summer	B02	1.001	B03	7.0	0.768	0.135	0.1700	
15 minute summer	B03	1.002	B04	10.5	0.867	0.203	0.1885	
15 minute summer	B04	1.003	B05	14.1	0.950	0.272	0.1709	
15 minute summer	B05	1.004	B08	17.6	0.956	0.339	0.2839	
15 minute summer	B06	2.000	B07	3.6	0.734	0.206	0.0905	
15 minute summer	B07	2.001	B08	7.0	1.374	0.231	0.0953	
15 minute summer	B08	1.005	B11	26.1	1.001	0.376	0.2944	
15 minute summer	B09	3.000	B10	3.7	0.865	0.186	0.0240	
15 minute summer	B10	3.001	B11	7.4	1.496	0.159	0.1290	
15 minute summer	DUMMY	4.000	B-PP1	-0.7	-0.132	-0.052	0.1107	
480 minute winter	B-PP1	4.001	B11	0.7	1.181	0.011	0.0030	
15 minute summer	B11	1.006	B12	35.0	0.927	0.827	0.7238	
15 minute summer	B12	1.007	B13	37.8	0.950	0.882	0.3500	
15 minute summer	B13	1.008	B15	40.5	1.018	0.956	0.0955	
15 minute summer	B14	5.000	B15	3.7	1.085	0.077	0.0659	
15 minute summer	B15	1.009	B16	46.3	1.165	1.091	0.3425	
15 minute summer	B16	1.010	B17	49.7	1.482	1.173	0.0790	
15 minute summer	B17	1.011	GEO AND HYDRO	49.2	2.038	0.525	0.0965	
15 minute winter	20	6.000	B-PP2	-0.4	-0.085	-0.028	0.0680	
360 minute winter	B-PP2	6.001	GEO AND HYDRO	0.3	0.819	0.006	0.0019	
240 minute summer	GEO AND HYDRO	1.012	ADOPT1	5.0	1.021	0.176	0.0378	
15 minute summer	ADOPT1	1.013	ADOPT2	5.0	0.922	0.249	0.0678	
30 minute winter	ADOPT2	1.014	AW-0452	5.0	0.732	0.251	0.1912	
15 minute winter	AW-0452	1.015	ADOPT	7.4	0.186	0.174	0.3977	41.2

Results for 100 year Critical Storm Duration. Lowest mass balance: 99.96%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute summer	ADOPT	1	2.393	0.300	5.4	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
----------------------	---------	------	---------	---------------	----------------	----------	----------------------------	---------------------------------

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.96%

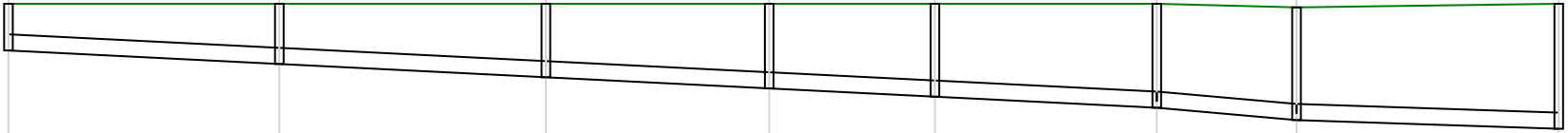
Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute summer	B01	9	4.648	0.048	5.4	0.0136	0.0000	OK
15 minute summer	B02	9	4.481	0.069	10.6	0.0195	0.0000	OK
15 minute summer	B03	9	4.315	0.088	15.6	0.0248	0.0000	OK
15 minute winter	B04	11	4.254	0.182	19.8	0.0514	0.0000	OK
15 minute winter	B05	11	4.241	0.284	24.1	0.0803	0.0000	SURCHARGED
15 minute summer	B06	9	4.657	0.057	5.4	0.0162	0.0000	OK
15 minute summer	B07	9	4.479	0.061	10.6	0.0172	0.0000	OK
15 minute winter	B08	11	4.210	0.407	34.8	0.1152	0.0000	SURCHARGED
15 minute summer	B09	9	4.657	0.057	5.4	0.0163	0.0000	OK
15 minute summer	B10	9	4.579	0.049	10.7	0.0138	0.0000	OK
480 minute winter	DUMMY	456	4.740	0.340	0.0	0.0961	0.0000	SURCHARGED
480 minute winter	B-PP1	456	4.740	0.390	6.0	52.5304	0.0000	SURCHARGED
15 minute winter	B11	11	4.158	0.527	44.8	0.1491	0.0000	SURCHARGED
15 minute winter	B12	11	3.996	0.486	47.0	0.1376	0.0000	SURCHARGED
120 minute winter	B13	116	3.967	0.517	18.8	0.1462	0.0000	SURCHARGED
15 minute summer	B14	9	4.034	0.034	5.4	0.0095	0.0000	OK
120 minute winter	B15	114	3.967	0.533	21.6	0.1507	0.0000	SURCHARGED
120 minute winter	B16	114	3.967	0.592	23.3	0.1674	0.0000	SURCHARGED
120 minute winter	B17	114	3.965	0.606	23.3	0.6859	0.0000	SURCHARGED
240 minute winter	20	224	4.565	0.165	0.1	0.0466	0.0000	SURCHARGED
240 minute winter	B-PP2	224	4.565	0.215	2.2	8.9917	0.0000	SURCHARGED
120 minute winter	GEO AND HYDRO	112	3.964	1.164	23.6	40.2534	0.0000	SURCHARGED
30 minute summer	ADOPT1	18	2.658	0.053	5.0	0.0599	0.0000	OK
60 minute summer	ADOPT2	171	2.496	0.051	5.0	0.0578	0.0000	OK
15 minute winter	AW-0452	11	2.405	0.245	5.0	0.2775	0.0000	SURCHARGED

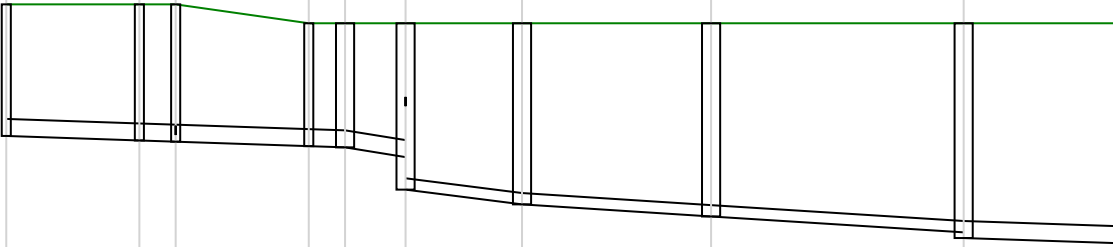
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute summer	B01	1.000	B02	5.2	0.641	0.101	0.1551	
15 minute summer	B02	1.001	B03	10.2	0.836	0.197	0.2274	
15 minute summer	B03	1.002	B04	15.8	0.919	0.303	0.3398	
15 minute summer	B04	1.003	B05	19.7	1.047	0.379	0.4198	
15 minute summer	B05	1.004	B08	25.4	0.936	0.488	0.6125	
15 minute summer	B06	2.000	B07	5.2	0.814	0.294	0.1169	
15 minute summer	B07	2.001	B08	10.5	1.397	0.344	0.2258	
15 minute summer	B08	1.005	B11	32.5	1.001	0.469	0.3858	
15 minute summer	B09	3.000	B10	5.3	0.951	0.267	0.0313	
15 minute summer	B10	3.001	B11	10.6	1.439	0.227	0.1376	
15 minute summer	DUMMY	4.000	B-PP1	-1.1	-0.150	-0.086	0.1563	
480 minute winter	B-PP1	4.001	B11	0.9	1.261	0.013	0.0035	
15 minute winter	B11	1.006	B12	43.1	1.083	1.019	0.7238	
15 minute winter	B12	1.007	B13	46.8	1.176	1.092	0.3500	
15 minute winter	B13	1.008	B15	50.6	1.272	1.194	0.0955	
15 minute summer	B14	5.000	B15	5.3	1.099	0.110	0.0689	
15 minute winter	B15	1.009	B16	58.0	1.459	1.366	0.3500	
15 minute summer	B16	1.010	B17	62.9	1.615	1.486	0.0883	
15 minute summer	B17	1.011	GEO AND HYDRO	62.8	2.135	0.670	0.1456	
15 minute summer	20	6.000	B-PP2	-0.7	-0.137	-0.055	0.0983	
240 minute winter	B-PP2	6.001	GEO AND HYDRO	0.4	0.870	0.007	0.0096	
15 minute winter	GEO AND HYDRO	1.012	ADOPT1	5.0	1.021	0.176	0.0378	
15 minute summer	ADOPT1	1.013	ADOPT2	5.0	0.923	0.249	0.0678	
60 minute summer	ADOPT2	1.014	AW-0452	5.0	0.623	0.251	0.1912	
30 minute winter	AW-0452	1.015	ADOPT	6.3	0.158	0.148	0.3977	78.6

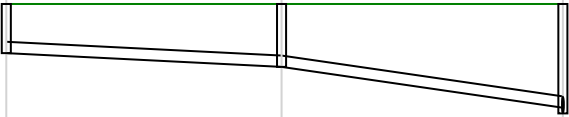
Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.96%

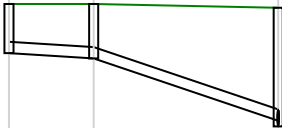
Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute summer	ADOPT	1	2.393	0.300	5.8	0.0000	0.0000	OK

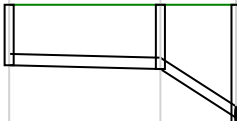
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
----------------------	---------	------	---------	---------------	----------------	----------	----------------------------	---------------------------------

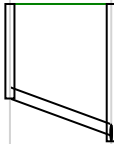
Node Name	B01	B02	B03	B04	B05	B08	B11	B12
								
A4 drawing								
Hor Scale 500								
Ver Scale 100								
Datum (m) -1.000								
Link Name	1.000	1.001	1.002	1.003	1.004	1.005	1.006	
Section Type	225mm	225mm	225mm	225mm	225mm	225mm	225mm	
Slope (1:X)	100.0	100.0	100.0	100.0	100.0	56.4	150.4	
Cover Level (m)	5.250	5.250	5.250	5.250	5.250	5.250	5.200	5.250
Invert Level (m)	4.600	4.412 4.412	4.227 4.227	4.072 4.072	3.957 3.957	3.803 3.803	3.631 3.631	3.510
Length (m)	18.800	18.500	15.500	11.500	15.400	9.700	18.200	

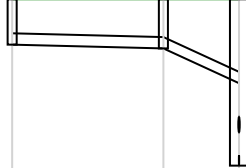
Node Name	B12	B13	B15	B16	B17	GEO AND	ADOPT1	ADOPT2	AW-0452	ADOPT						
<p>A4 drawing</p> <p>Hor Scale 500</p> <p>Ver Scale 100</p> <p>Datum (m) -2.000</p>																
	Link Name	1.007	1.008	1.009	1.010	1.011	1.012	1.013	1.014	1.015						
	Section Type	225mm	225	225mm	225	225m	150mm	150mm	150mm	225mm						
	Slope (1:X)	146.7	150	149.2	150	31.0	39.5	78.1	79.5	149.3						
	Cover Level (m)	5.250	5.250	5.250	5.000	5.000	5.000	5.000	5.000	5.000	5.000					
	Invert Level (m)	3.510	3.450	3.434	3.375	3.355	3.359	3.230	2.800	2.605	2.605	2.445	2.445	2.235	2.160	2.093
	Length (m)	8.800	2.4	8.800	2.4	4.000	7.700	12.500	16.700	10.000						

Node Name	B06	B07	B08
<p>A4 drawing</p> <p>Hor Scale 500</p> <p>Ver Scale 100</p> <p>Datum (m) -1.000</p>			
Link Name	2.000		2.001
Section Type	150mm		150mm
Slope (1:X)	100.0		34.4
Cover Level (m)	5.250	5.250	5.250
Invert Level (m)	4.600	4.418 4.418	3.878
Length (m)	18.200		18.600

Node Name	B09	B10	B11
<p>A4 drawing</p> <p>Hor Scale 500</p> <p>Ver Scale 100</p> <p>Datum (m) -1.000</p>			
Link Name	3.000	3.001	
Section Type	150mm	150mm	
Slope (1:X)	80.0	14.8	
Cover Level (m)	5.250	5.250	5.200
Invert Level (m)	4.600 4.530	4.530	3.706
Length (m)	5.600	12.200	

Node Name	DUMMY	B-PP1	B11
			
A4 drawing			
Hor Scale 500			
Ver Scale 100			
Datum (m) -1.000			
Link Name	4.000	4.001	
Section Type	150mm	150mm	
Slope (1:X)	200.0	7.8	
Cover Level (m)	5.200	5.200	5.200
Invert Level (m)	4.400	4.350 4.350 3.706	
Length (m)	10.000	5.000	

Node Name	B14	B15
<p>A4 drawing</p> <p>Hor Scale 500</p> <p>Ver Scale 100</p> <p>Datum (m) -1.000</p>		
Link Name	5.000	
Section Type	150mm	
Slope (1:X)	13.6	
Cover Level (m)	5.250	5.250
Invert Level (m)	4.000	3.509
Length (m)	6.700	

Node Name	20	B-PP2	GEO AND HYDRO	
A4 drawing Hor Scale 500 Ver Scale 100 Datum (m) -2.000				
	Link Name	6.000	6.001	
	Section Type	150mm	150mm	
	Slope (1:X)	200.0	10.9	
Cover Level (m)	5.000	5.000	5.000	
Invert Level (m)	4.400	4.350	4.350	3.890
Length (m)	10.000	5.000		

Design Settings

Rainfall Methodology	FEH-13	Minimum Velocity (m/s)	1.00
Return Period (years)	5	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	0.750	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	4.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
C01	0.005	4.00	4.300	600	161.600	520.800	0.689
C02	0.005	4.00	4.300	600	168.700	520.800	0.760
C03	0.008	4.00	4.650	600	185.500	520.800	1.278
C04	0.010	4.00	4.050	600	202.800	520.800	0.851
C05	0.010	4.00	4.050	600	219.300	520.800	1.016
C06	0.010	4.00	4.650	600	231.500	529.100	1.655
C07	0.025	4.00	4.650	600	231.500	520.800	1.738
GEO AND HYDRO			4.050	1200	238.200	520.800	1.625
C8			4.050	1000	245.200	520.800	1.820
C9			4.050	600	250.200	520.800	1.870
AW0451A			4.200	1200	255.200	520.800	2.270
11_OUT			4.200	600	265.200	520.800	2.300

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	C01	C02	7.100	0.600	3.611	3.540	0.071	100.0	225	4.09	50.0
1.001	C02	C03	16.800	0.600	3.540	3.372	0.168	100.0	225	4.30	50.0
1.002	C03	C04	17.300	0.600	3.372	3.199	0.173	100.0	225	4.53	50.0
1.003	C04	C05	16.500	0.600	3.199	3.034	0.165	100.0	225	4.74	50.0
1.004	C05	C07	12.200	0.600	3.034	2.912	0.122	100.0	225	4.89	50.0
2.000	C06	C07	8.300	0.600	2.995	2.912	0.083	100.0	225	4.11	50.0
1.005	C07	GEO AND HYDRO	6.000	0.600	2.912	2.845	0.067	89.6	225	4.98	50.0
1.006	GEO AND HYDRO	C8	7.000	0.600	2.425	2.355	0.070	100.0	225	5.12	50.0
1.007	C8	C9	5.000	0.600	2.230	2.180	0.050	100.0	225	5.21	50.0
1.008	C9	AW0451A	5.000	0.600	2.190	2.080	0.110	45.5	225	5.27	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.000	1.307	52.0	0.7	0.464	0.535	0.005	0.0
1.001	1.307	52.0	1.4	0.535	1.053	0.010	0.0
1.002	1.307	52.0	2.4	1.053	0.626	0.018	0.0
1.003	1.307	52.0	3.8	0.626	0.791	0.028	0.0
1.004	1.307	52.0	5.1	0.791	1.513	0.038	0.0
2.000	1.307	52.0	1.4	1.430	1.513	0.010	0.0
1.005	1.382	55.0	9.9	1.513	0.980	0.073	0.0
1.006	1.307	52.0	9.9	1.400	1.470	0.073	0.0
1.007	1.307	52.0	9.9	1.595	1.645	0.073	0.0
1.008	1.945	77.3	9.9	1.635	1.895	0.073	0.0

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.009	AW0451A	11_OUT	10.000	0.600	1.930	1.900	0.030	333.3	300	5.47	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.009	0.855	60.5	9.9	1.970	2.000	0.073	0.0

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	7.100	100.0	225	1 STANDARD	4.300	3.611	0.464	4.300	3.540	0.535
1.001	16.800	100.0	225	1 STANDARD	4.300	3.540	0.535	4.650	3.372	1.053
1.002	17.300	100.0	225	1 STANDARD	4.650	3.372	1.053	4.050	3.199	0.626
1.003	16.500	100.0	225	1 STANDARD	4.050	3.199	0.626	4.050	3.034	0.791
1.004	12.200	100.0	225	1 STANDARD	4.050	3.034	0.791	4.650	2.912	1.513
2.000	8.300	100.0	225	1 STANDARD	4.650	2.995	1.430	4.650	2.912	1.513
1.005	6.000	89.6	225	1 STANDARD	4.650	2.912	1.513	4.050	2.845	0.980
1.006	7.000	100.0	225	1 STANDARD	4.050	2.425	1.400	4.050	2.355	1.470
1.007	5.000	100.0	225	1 STANDARD	4.050	2.230	1.595	4.050	2.180	1.645
1.008	5.000	45.5	225	1 STANDARD	4.050	2.190	1.635	4.200	2.080	1.895
1.009	10.000	333.3	300	1 STANDARD	4.200	1.930	1.970	4.200	1.900	2.000

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	C01	600	Manhole	1 STANDARD	C02	600	Manhole	1 STANDARD
1.001	C02	600	Manhole	1 STANDARD	C03	600	Manhole	1 STANDARD
1.002	C03	600	Manhole	1 STANDARD	C04	600	Manhole	1 STANDARD
1.003	C04	600	Manhole	1 STANDARD	C05	600	Manhole	1 STANDARD
1.004	C05	600	Manhole	1 STANDARD	C07	600	Manhole	1 STANDARD
2.000	C06	600	Manhole	1 STANDARD	C07	600	Manhole	1 STANDARD
1.005	C07	600	Manhole	1 STANDARD	GEO AND HYDRO	1200	Manhole	1 STANDARD
1.006	GEO AND HYDRO	1200	Manhole	1 STANDARD	C8	1000	Manhole	1 STANDARD
1.007	C8	1000	Manhole	1 STANDARD	C9	600	Manhole	1 STANDARD
1.008	C9	600	Manhole	1 STANDARD	AW0451A	1200	Manhole	1 STANDARD
1.009	AW0451A	1200	Manhole	1 STANDARD	11_OUT		Manhole	1 STANDARD

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
C01	161.600	520.800	4.300	0.689	600				
						0	1.000	3.611	225
C02	168.700	520.800	4.300	0.760	600				
						1	1.000	3.540	225
						0	1.001	3.540	225
C03	185.500	520.800	4.650	1.278	600				
						1	1.001	3.372	225
						0	1.002	3.372	225

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
C04	202.800	520.800	4.050	0.851	600	1 → 0 	1.002	3.199	225
C05	219.300	520.800	4.050	1.016	600	1 → 0 	1.003	3.199	225
C06	231.500	529.100	4.650	1.655	600	0 	1.003	3.034	225
C07	231.500	520.800	4.650	1.738	600	1 → 2 	2.000	2.995	225
GEO AND HYDRO	238.200	520.800	4.050	1.625	1200	1 → 0 	1.004	2.912	225
C8	245.200	520.800	4.050	1.820	1000	1 → 0 	1.005	2.845	225
C9	250.200	520.800	4.050	1.870	600	1 → 0 	1.006	2.425	225
AW0451A	255.200	520.800	4.200	2.270	1200	1 → 0 	1.007	2.355	225
11_OUT	265.200	520.800	4.200	2.300		1 	1.008	2.230	225
							1.007	2.180	225
							1.008	2.190	225
							1.008	2.080	225
							1.009	1.930	300
							1.009	1.900	300

Simulation Settings

Rainfall Methodology	FEH-13	Analysis Speed	Detailed	Additional Storage (m ³ /ha)	0.0
Summer CV	0.750	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	0.840	Drain Down Time (mins)	1440	Check Discharge Volume	x

Storm Durations

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

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
30	40	0	0
100	0	0	0
100	45	0	0

Node GEO AND HYDRO Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	2.425	Product Number	CTL-SHE-0110-5000-0700-5000
Design Depth (m)	0.700	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	5.0	Min Node Diameter (mm)	1200

Node GEO AND HYDRO Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	2.425
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	55

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	58.2	0.0	0.660	58.2	0.0	0.661	0.0	0.0

Results for 2 year Critical Storm Duration. Lowest mass balance: 94.06%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute winter	C01	10	3.630	0.019	0.8	0.0055	0.0000	OK
15 minute winter	C02	10	3.567	0.027	1.6	0.0076	0.0000	OK
15 minute winter	C03	10	3.408	0.036	2.9	0.0101	0.0000	OK
15 minute winter	C04	10	3.243	0.044	4.4	0.0126	0.0000	OK
15 minute winter	C05	10	3.085	0.051	6.0	0.0144	0.0000	OK
15 minute winter	C06	10	3.022	0.027	1.6	0.0076	0.0000	OK
15 minute winter	C07	10	2.988	0.076	11.4	0.0215	0.0000	OK
120 minute winter	GEO AND HYDRO	82	2.522	0.097	3.6	5.4767	0.0000	OK
120 minute winter	C8	82	2.262	0.032	2.1	0.0251	0.0000	OK
120 minute winter	C9	82	2.215	0.035	2.1	0.0100	0.0000	OK
30 minute winter	AW0451A	27	2.204	0.274	1.7	0.3100	0.0000	OK
15 minute summer	11_OUT	1	2.200	0.300	1.8	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute winter	C01	1.000	C02	0.8	0.373	0.015	0.0154	
15 minute winter	C02	1.001	C03	1.6	0.477	0.031	0.0562	
15 minute winter	C03	1.002	C04	2.8	0.599	0.055	0.0826	
15 minute winter	C04	1.003	C05	4.4	0.716	0.084	0.1012	
15 minute winter	C05	1.004	C07	5.9	0.643	0.113	0.1127	
15 minute winter	C06	2.000	C07	1.6	0.243	0.031	0.0599	
15 minute winter	C07	1.005	GEO AND HYDRO	11.2	1.023	0.204	0.0658	
120 minute winter	GEO AND HYDRO	1.006	C8	2.1	0.626	0.040	0.0231	
120 minute winter	C8	1.007	C9	2.1	0.558	0.040	0.0185	
120 minute winter	C9	1.008	AW0451A	2.1	0.597	0.027	0.0602	
30 minute winter	AW0451A	1.009	11_OUT	3.0	0.044	0.050	0.6893	5.6

Results for 30 year Critical Storm Duration. Lowest mass balance: 94.06%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute summer	C01	10	3.642	0.031	2.1	0.0088	0.0000	OK
15 minute winter	C02	10	3.583	0.043	4.2	0.0122	0.0000	OK
15 minute winter	C03	10	3.430	0.058	7.5	0.0164	0.0000	OK
15 minute winter	C04	10	3.273	0.074	11.6	0.0210	0.0000	OK
15 minute winter	C05	10	3.121	0.087	15.6	0.0247	0.0000	OK
15 minute summer	C06	10	3.045	0.050	4.1	0.0143	0.0000	OK
15 minute winter	C07	10	3.047	0.135	30.0	0.0383	0.0000	OK
60 minute winter	GEO AND HYDRO	46	2.653	0.228	14.5	12.8717	0.0000	SURCHARGED
60 minute winter	C8	46	2.281	0.051	5.0	0.0397	0.0000	OK
60 minute winter	C9	46	2.229	0.049	5.0	0.0137	0.0000	OK
30 minute winter	AW0451A	19	2.210	0.280	4.9	0.3163	0.0000	OK
15 minute summer	11_OUT	1	2.200	0.300	8.1	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute summer	C01	1.000	C02	2.1	0.493	0.040	0.0305	
15 minute winter	C02	1.001	C03	4.2	0.632	0.081	0.1122	
15 minute winter	C03	1.002	C04	7.5	0.771	0.144	0.1685	
15 minute winter	C04	1.003	C05	11.5	0.901	0.222	0.2114	
15 minute winter	C05	1.004	C07	15.5	0.794	0.299	0.2389	
15 minute winter	C06	2.000	C07	4.2	0.290	0.080	0.1304	
15 minute winter	C07	1.005	GEO AND HYDRO	29.6	1.295	0.539	0.1371	
60 minute winter	GEO AND HYDRO	1.006	C8	5.0	0.800	0.096	0.0435	
60 minute winter	C8	1.007	C9	5.0	0.769	0.096	0.0323	
60 minute winter	C9	1.008	AW0451A	5.0	0.756	0.064	0.0655	
15 minute summer	AW0451A	1.009	11_OUT	8.1	0.118	0.135	0.6900	11.1

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 94.06%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute summer	C01	10	3.648	0.037	2.9	0.0105	0.0000	OK
15 minute summer	C02	10	3.590	0.050	5.8	0.0143	0.0000	OK
15 minute summer	C03	10	3.441	0.069	10.4	0.0196	0.0000	OK
15 minute winter	C04	10	3.289	0.090	16.2	0.0255	0.0000	OK
15 minute winter	C05	10	3.142	0.108	21.9	0.0306	0.0000	OK
15 minute winter	C06	10	3.084	0.089	5.8	0.0251	0.0000	OK
15 minute summer	C07	10	3.083	0.171	41.5	0.0484	0.0000	OK
60 minute winter	GEO AND HYDRO	48	2.767	0.342	20.3	19.2934	0.0000	SURCHARGED
30 minute summer	C8	22	2.281	0.051	5.0	0.0398	0.0000	OK
15 minute summer	C9	12	2.230	0.050	5.0	0.0141	0.0000	OK
30 minute winter	AW0451A	18	2.209	0.279	5.0	0.3157	0.0000	OK
15 minute summer	11_OUT	1	2.200	0.300	8.1	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute summer	C01	1.000	C02	2.9	0.537	0.056	0.0386	
15 minute summer	C02	1.001	C03	5.8	0.685	0.112	0.1430	
15 minute summer	C03	1.002	C04	10.4	0.826	0.200	0.2183	
15 minute winter	C04	1.003	C05	16.2	0.959	0.311	0.2780	
15 minute winter	C05	1.004	C07	21.8	0.844	0.420	0.3125	
15 minute winter	C06	2.000	C07	5.7	0.297	0.110	0.1946	
15 minute summer	C07	1.005	GEO AND HYDRO	41.5	1.395	0.756	0.1781	
30 minute summer	GEO AND HYDRO	1.006	C8	5.0	0.801	0.096	0.0437	
60 minute summer	C8	1.007	C9	5.0	0.770	0.096	0.0325	
15 minute winter	C9	1.008	AW0451A	5.0	1.007	0.065	0.0690	
15 minute summer	AW0451A	1.009	11_OUT	8.1	0.117	0.133	0.6889	15.4

Results for 100 year Critical Storm Duration. Lowest mass balance: 94.06%

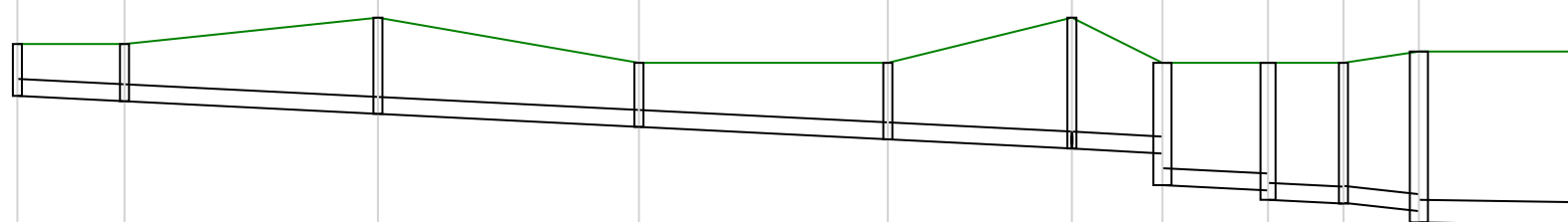
Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute summer	C01	10	3.647	0.036	2.7	0.0101	0.0000	OK
15 minute winter	C02	10	3.589	0.049	5.4	0.0138	0.0000	OK
15 minute summer	C03	10	3.439	0.067	9.7	0.0189	0.0000	OK
15 minute winter	C04	10	3.285	0.086	15.1	0.0245	0.0000	OK
15 minute summer	C05	10	3.137	0.103	20.4	0.0292	0.0000	OK
15 minute winter	C06	10	3.074	0.079	5.4	0.0222	0.0000	OK
15 minute summer	C07	10	3.074	0.162	39.2	0.0459	0.0000	OK
60 minute winter	GEO AND HYDRO	48	2.744	0.319	19.0	18.0134	0.0000	SURCHARGED
30 minute winter	C8	22	2.281	0.051	5.0	0.0398	0.0000	OK
15 minute summer	C9	12	2.230	0.050	5.0	0.0141	0.0000	OK
15 minute winter	AW0451A	13	2.210	0.280	5.0	0.3169	0.0000	OK
15 minute summer	11_OUT	1	2.200	0.300	8.9	0.0000	0.0000	OK

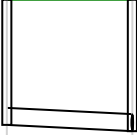
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute summer	C01	1.000	C02	2.7	0.527	0.052	0.0367	
15 minute winter	C02	1.001	C03	5.4	0.673	0.104	0.1356	
15 minute winter	C03	1.002	C04	9.7	0.814	0.186	0.2064	
15 minute winter	C04	1.003	C05	15.0	0.948	0.289	0.2619	
15 minute winter	C05	1.004	C07	20.3	0.834	0.391	0.2950	
15 minute summer	C06	2.000	C07	5.5	0.315	0.105	0.1777	
15 minute winter	C07	1.005	GEO AND HYDRO	38.7	1.376	0.704	0.1684	
30 minute winter	GEO AND HYDRO	1.006	C8	5.0	0.801	0.096	0.0437	
120 minute winter	C8	1.007	C9	5.0	0.770	0.096	0.0325	
30 minute summer	C9	1.008	AW0451A	5.0	0.904	0.065	0.0671	
15 minute summer	AW0451A	1.009	11_OUT	8.9	0.129	0.147	0.6915	14.6

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 94.06%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute winter	C01	10	3.654	0.043	3.9	0.0123	0.0000	OK
15 minute summer	C02	10	3.599	0.059	7.8	0.0167	0.0000	OK
15 minute summer	C03	10	3.454	0.082	14.0	0.0233	0.0000	OK
15 minute summer	C04	10	3.308	0.109	21.8	0.0308	0.0000	OK
15 minute winter	C05	11	3.180	0.146	29.7	0.0413	0.0000	OK
15 minute winter	C06	10	3.151	0.156	7.8	0.0441	0.0000	OK
15 minute winter	C07	10	3.147	0.235	54.6	0.0666	0.0000	SURCHARGED
60 minute winter	GEO AND HYDRO	58	2.940	0.515	27.8	29.0684	0.0000	SURCHARGED
120 minute summer	C8	62	2.281	0.051	5.0	0.0398	0.0000	OK
15 minute summer	C9	11	2.231	0.051	5.0	0.0144	0.0000	OK
30 minute summer	AW0451A	17	2.209	0.279	5.0	0.3161	0.0000	OK
15 minute summer	11_OUT	1	2.200	0.300	7.6	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute winter	C01	1.000	C02	3.9	0.576	0.075	0.0484	
15 minute summer	C02	1.001	C03	7.8	0.731	0.150	0.1803	
15 minute summer	C03	1.002	C04	14.0	0.876	0.270	0.2782	
15 minute winter	C04	1.003	C05	21.9	0.979	0.422	0.3762	
15 minute winter	C05	1.004	C07	28.6	0.849	0.549	0.4090	
15 minute winter	C06	2.000	C07	7.5	0.302	0.145	0.2867	
15 minute winter	C07	1.005	GEO AND HYDRO	54.1	1.437	0.985	0.2278	
15 minute summer	GEO AND HYDRO	1.006	C8	5.0	0.801	0.096	0.0437	
120 minute summer	C8	1.007	C9	5.0	0.770	0.096	0.0325	
15 minute winter	C9	1.008	AW0451A	5.0	1.009	0.065	0.0699	
30 minute winter	AW0451A	1.009	11_OUT	8.1	0.116	0.133	0.6919	31.8

Node Name	C01	C02	C03	C04	C05	C07	GEO AND	CDRCC9	AW0451A	11_OUT	
											
A4 drawing											
Hor Scale 500											
Ver Scale 100											
Datum (m) -2.000											
Link Name	1.000	1.001	1.002	1.003	1.004	1.005	1.006	1.007	1.008	1.009	
Section Type	225mm	225mm	225mm	225mm	225mm	225mm	225mm	225mm	225mm	300mm	
Slope (1:X)	100.0	100.0	100.0	100.0	100.0	89.6	100.0	100.0	45.5	333.3	
Cover Level (m)	4.300	4.300	4.650	4.050	4.050	4.650	4.050	4.050	4.050	4.200	
Invert Level (m)	3.611 3.540 3.540		3.372 3.372	3.199 3.199	3.034 3.034	2.912 2.912	2.845 2.425	2.355 2.230	2.180 2.190	2.080 1.930	1.900
Length (m)	7.100	16.800	17.300	16.500	12.200	6.000	7.000	5.000	5.000	10.000	

Node Name	C06	C07
<p>A4 drawing</p> <p>Hor Scale 500 Ver Scale 100</p> <p>Datum (m) -2.000</p>		
Link Name	2.000	
Section Type	225mm	
Slope (1:X)	100.0	
Cover Level (m)	4.650	4.650
Invert Level (m)	2.995	2.912
Length (m)	8.300	

Design Settings

Rainfall Methodology	FEH-13	Minimum Velocity (m/s)	1.00
Return Period (years)	5	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	0.750	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
D01	0.020	5.00	5.000	1200	238.475	342.175	1.425
D02	0.022	5.00	5.000	1200	246.775	342.175	1.467
D03	0.037	5.00	5.000	1200	263.975	342.175	1.553
D04	0.037	5.00	4.650	1200	273.975	372.675	1.347
D05	0.031	5.00	4.455	1200	273.975	360.575	1.212
D06	0.020	5.00	4.850	1200	291.675	352.175	1.561
D07	0.020	5.00	4.600	1200	273.975	352.175	1.399
600 CONNECT	0.040	5.00	4.500	1800	273.975	342.175	2.341
GEO HYDRO	0.031	5.00	4.455	1500	326.475	342.175	2.405
D09			4.400	1200	336.475	342.175	2.593
SW-A-04			4.375	1800	343.975	342.175	3.178
11_OUT			4.375		353.975	342.175	3.203

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	D01	D02	8.300	0.600	3.575	3.533	0.042	197.6	300	5.12	50.0
1.001	D02	D03	17.200	0.600	3.533	3.447	0.086	200.0	300	5.38	50.0
1.002	D03	600 CONNECT	10.000	0.600	3.447	3.397	0.050	200.0	300	5.53	50.0
2.000	D04	D05	12.100	0.600	3.303	3.243	0.060	201.7	300	5.18	50.0
2.001	D05	D07	8.400	0.600	3.243	3.201	0.042	200.0	300	5.31	50.0
3.000	D06	D07	17.700	0.600	3.289	3.201	0.088	201.1	300	5.27	50.0
2.002	D07	600 CONNECT	10.000	0.600	3.201	3.130	0.071	140.8	300	5.44	50.0
1.003	600 CONNECT	GEO HYDRO	52.500	0.600	2.159	2.050	0.109	481.7	600	6.41	50.0
1.004	GEO HYDRO	D09	10.000	0.600	2.050	1.807	0.243	41.2	225	6.49	50.0
1.005	D09	SW-A-04	7.500	0.600	1.807	1.722	0.085	88.2	225	6.58	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.000	1.115	78.8	2.7	1.125	1.167	0.020	0.0
1.001	1.108	78.3	5.7	1.167	1.253	0.042	0.0
1.002	1.108	78.3	10.7	1.253	0.803	0.079	0.0
2.000	1.103	78.0	5.0	1.047	0.912	0.037	0.0
2.001	1.108	78.3	9.2	0.912	1.099	0.068	0.0
3.000	1.105	78.1	2.7	1.261	1.099	0.020	0.0
2.002	1.323	93.5	14.6	1.099	1.070	0.108	0.0
1.003	1.103	311.8	30.8	1.741	1.805	0.227	0.0
1.004	2.045	81.3	35.0	2.180	2.368	0.258	0.0
1.005	1.392	55.4	35.0	2.368	2.428	0.258	0.0

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.006	SW-A-04	11_OUT	10.000	0.600	1.197	1.172	0.025	400.0	675	6.71	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.006	1.304	466.6	35.0	2.503	2.528	0.258	0.0

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	8.300	197.6	300	1 STANDARD	5.000	3.575	1.125	5.000	3.533	1.167
1.001	17.200	200.0	300	1 STANDARD	5.000	3.533	1.167	5.000	3.447	1.253
1.002	10.000	200.0	300	1 STANDARD	5.000	3.447	1.253	4.500	3.397	0.803
2.000	12.100	201.7	300	1 STANDARD	4.650	3.303	1.047	4.455	3.243	0.912
2.001	8.400	200.0	300	1 STANDARD	4.455	3.243	0.912	4.600	3.201	1.099
3.000	17.700	201.1	300	1 STANDARD	4.850	3.289	1.261	4.600	3.201	1.099
2.002	10.000	140.8	300	1 STANDARD	4.600	3.201	1.099	4.500	3.130	1.070
1.003	52.500	481.7	600	1 STANDARD	4.500	2.159	1.741	4.455	2.050	1.805
1.004	10.000	41.2	225	1 STANDARD	4.455	2.050	2.180	4.400	1.807	2.368
1.005	7.500	88.2	225	1 STANDARD	4.400	1.807	2.368	4.375	1.722	2.428
1.006	10.000	400.0	675	1 STANDARD	4.375	1.197	2.503	4.375	1.172	2.528

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	D01	1200	Manhole	1 STANDARD	D02	1200	Manhole	1 STANDARD
1.001	D02	1200	Manhole	1 STANDARD	D03	1200	Manhole	1 STANDARD
1.002	D03	1200	Manhole	1 STANDARD	600 CONNECT	1800	Manhole	1 STANDARD
2.000	D04	1200	Manhole	1 STANDARD	D05	1200	Manhole	1 STANDARD
2.001	D05	1200	Manhole	1 STANDARD	D07	1200	Manhole	1 STANDARD
3.000	D06	1200	Manhole	1 STANDARD	D07	1200	Manhole	1 STANDARD
2.002	D07	1200	Manhole	1 STANDARD	600 CONNECT	1800	Manhole	1 STANDARD
1.003	600 CONNECT	1800	Manhole	1 STANDARD	GEO HYDRO	1500	Manhole	1 STANDARD
1.004	GEO HYDRO	1500	Manhole	1 STANDARD	D09	1200	Manhole	1 STANDARD
1.005	D09	1200	Manhole	1 STANDARD	SW-A-04	1800	Manhole	1 STANDARD
1.006	SW-A-04	1800	Manhole	1 STANDARD	11_OUT		Manhole	1 STANDARD

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
D01	238.475	342.175	5.000	1.425	1200				
						0	1.000	3.575	300
D02	246.775	342.175	5.000	1.467	1200				
						1	1.000	3.533	300
D03	263.975	342.175	5.000	1.553	1200				
						0	1.001	3.533	300
						1	1.001	3.447	300
						0	1.002	3.447	300

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
D04	273.975	372.675	4.650	1.347	1200		0	2.000	3.303	300
D05	273.975	360.575	4.455	1.212	1200		1	2.000	3.243	300
D06	291.675	352.175	4.850	1.561	1200		0	2.001	3.243	300
D07	273.975	352.175	4.600	1.399	1200		1	3.000	3.201	300
							2	2.001	3.201	300
							0	2.002	3.201	300
600 CONNECT	273.975	342.175	4.500	2.341	1800		1	2.002	3.130	300
							2	1.002	3.397	300
							0	1.003	2.159	600
GEO HYDRO	326.475	342.175	4.455	2.405	1500		1	1.003	2.050	600
							0	1.004	2.050	225
D09	336.475	342.175	4.400	2.593	1200		1	1.004	1.807	225
							0	1.005	1.807	225
SW-A-04	343.975	342.175	4.375	3.178	1800		1	1.005	1.722	225
							0	1.006	1.197	675
11_OUT	353.975	342.175	4.375	3.203			1	1.006	1.172	675

Simulation Settings

Rainfall Methodology	FEH-13	Analysis Speed	Detailed	Additional Storage (m ³ /ha)	0.0
Summer CV	0.750	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	0.840	Drain Down Time (mins)	1440	Check Discharge Volume	x

Storm Durations

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

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
30	40	0	0
100	0	0	0
100	45	0	0

Node GEO HYDRO Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	2.050	Product Number	CTL-SHE-0151-1250-1700-1250
Design Depth (m)	1.700	Min Outlet Diameter (m)	0.225
Design Flow (l/s)	12.5	Min Node Diameter (mm)	1500

Node GEO HYDRO Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	2.050
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	86

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	84.5	0.0	1.320	84.5	0.0	1.321	0.0	0.0

Results for 2 year Critical Storm Duration. Lowest mass balance: 96.12%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute winter	D01	10	3.614	0.039	3.0	0.0446	0.0000	OK
15 minute winter	D02	10	3.589	0.056	6.3	0.0636	0.0000	OK
15 minute winter	D03	11	3.529	0.082	11.6	0.0923	0.0000	OK
15 minute winter	D04	10	3.356	0.053	5.5	0.0602	0.0000	OK
15 minute winter	D05	10	3.322	0.079	10.0	0.0890	0.0000	OK
15 minute winter	D06	10	3.328	0.039	3.0	0.0446	0.0000	OK
15 minute winter	D07	11	3.289	0.088	15.8	0.1001	0.0000	OK
15 minute winter	600 CONNECT	11	2.290	0.131	32.7	0.3336	0.0000	OK
120 minute winter	GEO HYDRO	80	2.231	0.181	13.1	14.8622	0.0000	OK
30 minute winter	D09	26	1.867	0.060	7.7	0.0682	0.0000	OK
60 minute winter	SW-A-04	42	1.852	0.655	8.0	1.6658	0.0000	OK
15 minute summer	11_OUT	1	1.847	0.675	8.7	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute winter	D01	1.000	D02	3.0	0.410	0.038	0.0604	
15 minute winter	D02	1.001	D03	6.1	0.503	0.078	0.2112	
15 minute winter	D03	1.002	600 CONNECT	11.4	0.772	0.146	0.1483	
15 minute winter	D04	2.000	D05	5.4	0.475	0.070	0.1399	
15 minute winter	D05	2.001	D07	9.9	0.618	0.126	0.1340	
15 minute winter	D06	3.000	D07	2.9	0.269	0.037	0.2008	
15 minute winter	D07	2.002	600 CONNECT	15.7	0.950	0.167	0.1649	
15 minute winter	600 CONNECT	1.003	GEO HYDRO	33.3	1.103	0.107	2.1235	
120 minute winter	GEO HYDRO	1.004	D09	8.1	1.128	0.099	0.0717	
120 minute winter	D09	1.005	SW-A-04	8.1	0.820	0.146	0.1161	
60 minute winter	SW-A-04	1.006	11_OUT	14.0	0.039	0.030	3.5528	23.8

Results for 30 year Critical Storm Duration. Lowest mass balance: 96.12%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute winter	D01	10	3.643	0.068	7.8	0.0772	0.0000	OK
15 minute winter	D02	10	3.626	0.093	16.3	0.1047	0.0000	OK
15 minute winter	D03	10	3.586	0.139	30.4	0.1578	0.0000	OK
15 minute winter	D04	10	3.399	0.096	14.4	0.1081	0.0000	OK
15 minute winter	D05	10	3.385	0.142	26.3	0.1603	0.0000	OK
15 minute winter	D06	11	3.356	0.067	7.8	0.0758	0.0000	OK
15 minute winter	D07	11	3.354	0.153	40.9	0.1728	0.0000	OK
60 minute winter	600 CONNECT	49	2.511	0.352	44.6	0.8949	0.0000	OK
60 minute winter	GEO HYDRO	49	2.511	0.461	45.7	37.8191	0.0000	SURCHARGED
60 minute winter	D09	48	1.885	0.078	12.4	0.0884	0.0000	OK
60 minute winter	SW-A-04	47	1.857	0.660	12.8	1.6803	0.0000	OK
15 minute summer	11_OUT	1	1.847	0.675	22.4	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute winter	D01	1.000	D02	7.7	0.507	0.098	0.1266	
15 minute winter	D02	1.001	D03	16.0	0.637	0.204	0.4346	
15 minute winter	D03	1.002	600 CONNECT	29.9	0.994	0.382	0.3018	
15 minute winter	D04	2.000	D05	14.2	0.550	0.182	0.3148	
15 minute winter	D05	2.001	D07	25.9	0.755	0.331	0.2881	
15 minute winter	D06	3.000	D07	7.6	0.335	0.097	0.4225	
15 minute winter	D07	2.002	600 CONNECT	40.8	1.213	0.437	0.3369	
15 minute winter	600 CONNECT	1.003	GEO HYDRO	86.2	1.232	0.276	7.9859	
60 minute winter	GEO HYDRO	1.004	D09	12.4	1.198	0.152	0.1044	
60 minute winter	D09	1.005	SW-A-04	12.8	0.965	0.231	0.1391	
60 minute winter	SW-A-04	1.006	11_OUT	24.8	0.070	0.053	3.5581	70.5

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 96.12%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute winter	D01	10	3.661	0.086	10.9	0.0974	0.0000	OK
15 minute winter	D02	10	3.649	0.116	22.7	0.1316	0.0000	OK
15 minute winter	D03	10	3.619	0.172	42.5	0.1942	0.0000	OK
15 minute winter	D04	10	3.430	0.127	20.2	0.1438	0.0000	OK
15 minute winter	D05	10	3.421	0.178	36.7	0.2011	0.0000	OK
15 minute winter	D06	11	3.392	0.103	10.9	0.1169	0.0000	OK
15 minute winter	D07	11	3.390	0.189	57.2	0.2134	0.0000	OK
60 minute winter	600 CONNECT	57	2.761	0.602	62.6	1.5330	0.0000	SURCHARGED
60 minute winter	GEO HYDRO	58	2.761	0.711	62.2	58.3390	0.0000	SURCHARGED
15 minute summer	D09	14	1.886	0.079	12.4	0.0896	0.0000	OK
240 minute summer	SW-A-04	164	1.857	0.660	12.9	1.6805	0.0000	OK
15 minute summer	11_OUT	1	1.847	0.675	23.8	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute winter	D01	1.000	D02	10.8	0.520	0.137	0.1740	
15 minute winter	D02	1.001	D03	22.3	0.669	0.285	0.5755	
15 minute winter	D03	1.002	600 CONNECT	41.7	1.075	0.533	0.3899	
15 minute winter	D04	2.000	D05	19.8	0.560	0.254	0.4350	
15 minute winter	D05	2.001	D07	36.1	0.803	0.460	0.3772	
15 minute winter	D06	3.000	D07	10.6	0.348	0.136	0.6030	
15 minute winter	D07	2.002	600 CONNECT	57.0	1.312	0.610	0.4347	
15 minute winter	600 CONNECT	1.003	GEO HYDRO	119.5	1.279	0.383	12.3287	
30 minute summer	GEO HYDRO	1.004	D09	12.5	1.199	0.154	0.1052	
60 minute summer	D09	1.005	SW-A-04	12.9	0.943	0.232	0.1393	
180 minute summer	SW-A-04	1.006	11_OUT	25.0	0.070	0.054	3.5581	129.2

Results for 100 year Critical Storm Duration. Lowest mass balance: 96.12%

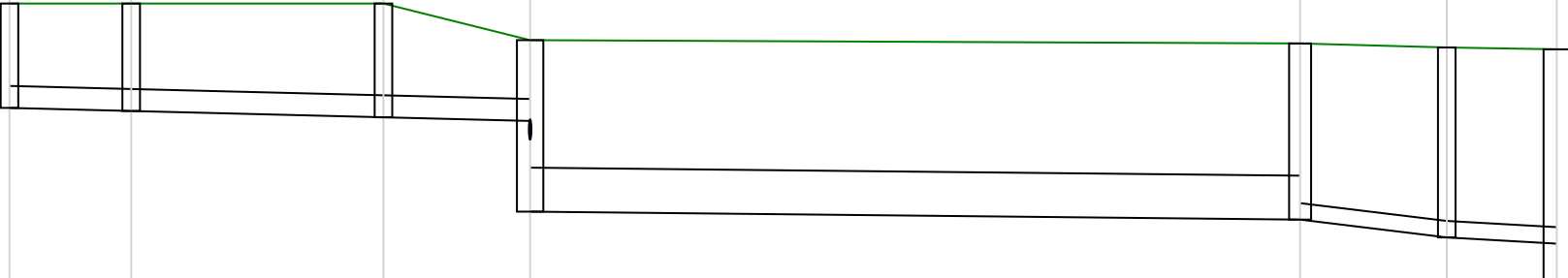
Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	D01	10	3.656	0.081	10.1	0.0921	0.0000	OK
15 minute winter	D02	10	3.644	0.111	21.2	0.1250	0.0000	OK
15 minute winter	D03	10	3.611	0.164	39.6	0.1855	0.0000	OK
15 minute winter	D04	10	3.422	0.119	18.8	0.1346	0.0000	OK
15 minute winter	D05	10	3.412	0.169	34.1	0.1912	0.0000	OK
15 minute winter	D06	11	3.384	0.095	10.1	0.1072	0.0000	OK
15 minute winter	D07	11	3.381	0.180	53.2	0.2036	0.0000	OK
60 minute winter	600 CONNECT	55	2.701	0.542	59.0	1.3800	0.0000	OK
60 minute winter	GEO HYDRO	54	2.701	0.651	58.8	53.4270	0.0000	SURCHARGED
60 minute winter	D09	76	1.886	0.079	12.5	0.0891	0.0000	OK
30 minute winter	SW-A-04	37	1.857	0.660	12.9	1.6805	0.0000	OK
15 minute summer	11_OUT	1	1.847	0.675	24.6	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	D01	1.000	D02	10.0	0.519	0.127	0.1618	
15 minute winter	D02	1.001	D03	20.8	0.663	0.266	0.5413	
15 minute winter	D03	1.002	600 CONNECT	38.9	1.058	0.496	0.3691	
15 minute winter	D04	2.000	D05	18.4	0.558	0.236	0.4047	
15 minute winter	D05	2.001	D07	33.5	0.792	0.428	0.3559	
15 minute winter	D06	3.000	D07	9.9	0.345	0.127	0.5592	
15 minute winter	D07	2.002	600 CONNECT	53.1	1.290	0.568	0.4113	
15 minute winter	600 CONNECT	1.003	GEO HYDRO	111.9	1.272	0.359	11.3432	
60 minute summer	GEO HYDRO	1.004	D09	12.5	1.200	0.154	0.1053	
30 minute winter	D09	1.005	SW-A-04	12.9	1.051	0.232	0.1396	
120 minute summer	SW-A-04	1.006	11_OUT	25.0	0.070	0.054	3.5580	104.4

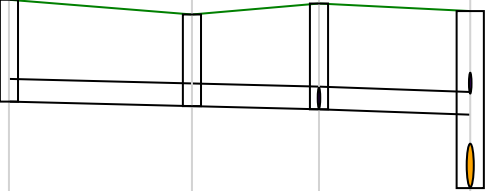
Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 96.12%

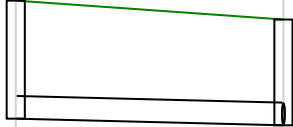
Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	D01	10	3.687	0.112	14.7	0.1264	0.0000	OK
15 minute winter	D02	10	3.681	0.148	30.6	0.1669	0.0000	OK
15 minute winter	D03	10	3.657	0.210	57.0	0.2373	0.0000	OK
15 minute winter	D04	11	3.476	0.173	27.2	0.1961	0.0000	OK
15 minute winter	D05	11	3.467	0.224	49.3	0.2532	0.0000	OK
15 minute winter	D06	11	3.438	0.149	14.7	0.1690	0.0000	OK
15 minute winter	D07	11	3.435	0.234	76.9	0.2647	0.0000	OK
120 minute winter	600 CONNECT	114	3.276	1.117	53.5	2.8440	0.0000	SURCHARGED
120 minute winter	GEO HYDRO	112	3.259	1.209	56.7	99.1863	0.0000	SURCHARGED
15 minute summer	D09	13	1.886	0.079	12.5	0.0892	0.0000	OK
60 minute winter	SW-A-04	143	1.857	0.660	12.9	1.6805	0.0000	OK
15 minute summer	11_OUT	1	1.847	0.675	25.0	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	D01	1.000	D02	14.4	0.525	0.183	0.2422	
15 minute winter	D02	1.001	D03	29.8	0.686	0.381	0.7491	
15 minute winter	D03	1.002	600 CONNECT	56.1	1.148	0.716	0.4896	
15 minute winter	D04	2.000	D05	26.5	0.566	0.340	0.5965	
15 minute winter	D05	2.001	D07	48.3	0.844	0.617	0.4846	
15 minute winter	D06	3.000	D07	14.4	0.351	0.184	0.8321	
15 minute winter	D07	2.002	600 CONNECT	76.7	1.393	0.820	0.5492	
15 minute winter	600 CONNECT	1.003	GEO HYDRO	154.2	1.328	0.495	14.7881	
30 minute winter	GEO HYDRO	1.004	D09	12.5	1.199	0.154	0.1053	
15 minute winter	D09	1.005	SW-A-04	12.9	1.068	0.233	0.1395	
600 minute summer	SW-A-04	1.006	11_OUT	25.0	0.071	0.054	3.5580	248.2

Node Name	D01	D02	D03	600 CONNECT	GEO HYDRO	D09	SW-A-04
							
A4 drawing							
Hor Scale 500							
Ver Scale 100							
Datum (m) -3.000							
Link Name	1.000	1.001	1.002	1.003	1.004	1.005	
Section Type	300mm	300mm	300mm	600mm	225mm	225mm	
Slope (1:X)	197.6	200.0	200.0	481.7	41.2	88.2	
Cover Level (m)	5.000	5.000	5.000	4.500	4.455	4.400	4.375
Invert Level (m)	3.575 3.533	3.533	3.447 3.447	3.397 2.159	2.050 2.050	1.807 1.807	1.722
Length (m)	8.300	17.200	10.000	52.500	10.000	7.500	

Node Name	SW-A-04	11_OUT
<p>A4 drawing</p> <p>Hor Scale 500</p> <p>Ver Scale 100</p> <p>Datum (m) -3.000</p>		
Link Name	1.006	
Section Type	675mm	
Slope (1:X)	400.0	
Cover Level (m)	4.375	4.375
Invert Level (m)	1.197	1.172
Length (m)	10.000	

Node Name	D04	D05	D07	600 CONNECT
				
A4 drawing				
Hor Scale 500				
Ver Scale 100				
Datum (m) -2.000				
Link Name	2.000	2.001	2.002	
Section Type	300mm	300mm	300mm	
Slope (1:X)	201.7	200.0	140.8	
Cover Level (m)	4.650	4.455	4.600	4.500
Invert Level (m)	3.303	3.243 3.243	3.201 3.201	3.130
Length (m)	12.100	8.400	10.000	

Node Name	D06	D07
		
A4 drawing		
Hor Scale 500		
Ver Scale 100		
Datum (m) -2.000		
Link Name	3.000	
Section Type	300mm	
Slope (1:X)	201.1	
Cover Level (m)	4.850	4.600
Invert Level (m)	3.289	3.201
Length (m)	17.700	

Design Settings

Rainfall Methodology	FEH-13	Minimum Velocity (m/s)	1.00
Return Period (years)	10	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	0.750	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	3.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
MH01	0.020	5.00	5.000	1500	283.075	785.500	2.764
MH02	0.020	3.00	4.300	1500	302.375	785.500	2.622
MH03	0.020	3.00	4.100	1500	314.875	785.500	2.735
MH04	0.020	5.00	4.000	1500	334.875	833.600	1.857
MH05	0.030	3.00	4.000	1500	334.875	820.400	2.187
MH06	0.030	3.00	4.050	1500	334.875	808.700	2.605
MH07	0.050	3.00	4.100	1800	334.875	785.500	3.310
MH08	0.050	3.00	4.000	1800	345.675	785.500	3.246
MH09	0.060	3.00	4.000	1800	358.075	785.500	3.287
MH10	0.060	3.00	3.800	1800	368.675	785.500	3.122
MH11	0.030	5.00	4.400	1500	382.275	841.500	2.218
MH12	0.030	3.00	4.350	1500	382.275	831.700	2.413
MH13	0.030	3.00	4.100	1500	382.275	821.100	2.428
MH14	0.030	3.00	4.000	1500	382.275	800.500	2.843
MH15	0.060	3.00	4.000	1800	382.275	785.500	3.518
MH16	0.060	5.00	3.600	1800	398.775	899.500	1.921
MH17	0.050	3.00	3.600	1800	398.775	880.000	2.858
MH18	0.050	3.00	3.900	1800	398.775	856.300	3.237
MH19	0.050	3.00	3.960	1800	398.775	835.200	3.367
MH20	0.050	3.00	3.960	1800	398.775	826.500	3.396
MH21	0.050	3.00	4.000	1800	398.775	808.000	3.498
MH22	0.020	5.00	3.600	1800	557.075	791.500	1.606
MH23	0.020	3.00	3.600	1800	545.775	791.500	1.644
MH24	0.020	3.00	3.600	1800	522.275	791.500	1.722
MH25	0.020	3.00	3.600	1800	517.275	791.500	1.739
MH26	0.020	5.00	3.600	1500	500.375	770.400	1.423
MH27	0.030	3.00	3.600	1800	500.375	784.400	1.771
MH28	0.040	3.00	3.600	1800	500.375	791.500	1.795
MH29	0.040	3.00	3.750	1800	490.375	791.500	2.997
MH30	0.040	3.00	4.100	1800	469.975	791.500	3.415
MH31	0.040	3.00	4.100	1800	442.375	791.500	3.507
MH32	0.085	3.00	4.100	1800	430.375	791.500	3.547
MH33	0.085	3.00	4.100	1800	411.375	791.500	3.611
MH34	0.080	3.00	4.000	1800	398.775	791.500	3.553
MH35	0.080	3.00	3.900	1800	398.775	785.500	3.473
MH36	0.080	3.00	3.825	1800	411.875	785.500	3.425
PUMP AND GEO	0.080	3.00	4.050	1800	416.875	785.500	3.660
MH37			4.050	1200	436.875	785.500	1.450
MH38			3.750	1200	444.175	785.500	1.400
SW-A-07			3.700	1800	447.175	785.500	2.716
40_OUT			3.700	1200	457.175	785.500	2.736

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	MH01	MH02	19.300	0.600	2.236	1.753	0.483	40.0	300	5.13	50.0
1.001	MH02	MH03	12.500	0.600	1.678	1.365	0.313	39.9	375	5.20	50.0
1.002	MH03	MH07	20.000	0.600	1.365	0.865	0.500	40.0	375	5.32	50.0
2.000	MH04	MH05	13.200	0.600	2.143	1.813	0.330	40.0	300	5.09	50.0
2.001	MH05	MH06	11.700	0.600	1.813	1.520	0.293	39.9	300	5.17	50.0
2.002	MH06	MH07	23.200	0.600	1.445	0.865	0.580	40.0	375	5.30	50.0
1.003	MH07	MH08	10.800	0.600	0.790	0.754	0.036	300.0	450	5.47	50.0
1.004	MH08	MH09	12.400	0.600	0.754	0.713	0.041	302.4	450	5.65	50.0
1.005	MH09	MH10	10.600	0.600	0.713	0.678	0.035	302.9	450	5.80	50.0
1.006	MH10	MH15	13.600	0.600	0.678	0.632	0.046	295.7	450	5.99	50.0
3.000	MH11	MH12	9.800	0.600	2.182	1.937	0.245	40.0	300	5.07	50.0
3.001	MH12	MH13	10.600	0.600	1.937	1.672	0.265	40.0	300	5.14	50.0
3.002	MH13	MH14	20.600	0.600	1.672	1.157	0.515	40.0	300	5.27	50.0
3.003	MH14	MH15	15.000	0.600	1.157	0.782	0.375	40.0	300	5.37	50.0
1.007	MH15	MH35	16.500	0.600	0.482	0.427	0.055	300.0	600	6.19	50.0
4.000	MH16	MH17	19.500	0.600	1.679	0.892	0.787	24.8	450	5.08	50.0
4.001	MH17	MH18	23.700	0.600	0.742	0.663	0.079	300.0	600	5.36	50.0
4.002	MH18	MH19	21.100	0.600	0.663	0.593	0.070	301.4	600	5.61	50.0
4.003	MH19	MH20	8.700	0.600	0.593	0.564	0.029	300.0	600	5.72	50.0
4.004	MH20	MH21	18.500	0.600	0.564	0.502	0.062	298.4	600	5.94	50.0
4.005	MH21	MH34	16.500	0.600	0.502	0.447	0.055	300.0	600	6.13	50.0
5.000	MH22	MH23	11.300	0.600	1.994	1.956	0.038	297.4	450	5.16	50.0
5.001	MH23	MH24	23.500	0.600	1.956	1.878	0.078	301.3	450	5.50	50.0
5.002	MH24	MH25	5.000	0.600	1.878	1.861	0.017	294.1	450	5.57	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.000	2.494	176.3	2.7	2.464	2.247	0.020	0.0
1.001	2.874	317.4	5.4	2.247	2.360	0.040	0.0
1.002	2.872	317.2	8.1	2.360	2.860	0.060	0.0
2.000	2.493	176.2	2.7	1.557	1.887	0.020	0.0
2.001	2.495	176.4	6.8	1.887	2.230	0.050	0.0
2.002	2.872	317.2	10.8	2.230	2.860	0.080	0.0
1.003	1.168	185.8	25.7	2.860	2.796	0.190	0.0
1.004	1.164	185.0	32.5	2.796	2.837	0.240	0.0
1.005	1.163	184.9	40.7	2.837	2.672	0.300	0.0
1.006	1.177	187.2	48.8	2.672	2.918	0.360	0.0
3.000	2.493	176.2	4.1	1.918	2.113	0.030	0.0
3.001	2.493	176.2	8.1	2.113	2.128	0.060	0.0
3.002	2.493	176.2	12.2	2.128	2.543	0.090	0.0
3.003	2.493	176.2	16.3	2.543	2.918	0.120	0.0
1.007	1.400	396.0	73.2	2.918	2.873	0.540	0.0
4.000	4.097	651.6	8.1	1.471	2.258	0.060	0.0
4.001	1.400	396.0	14.9	2.258	2.637	0.110	0.0
4.002	1.397	395.0	21.7	2.637	2.767	0.160	0.0
4.003	1.400	396.0	28.5	2.767	2.796	0.210	0.0
4.004	1.404	397.0	35.2	2.796	2.898	0.260	0.0
4.005	1.400	396.0	42.0	2.898	2.953	0.310	0.0
5.000	1.173	186.6	2.7	1.156	1.194	0.020	0.0
5.001	1.166	185.4	5.4	1.194	1.272	0.040	0.0
5.002	1.180	187.7	8.1	1.272	1.289	0.060	0.0

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
5.003	MH25	MH28	16.900	0.600	1.861	1.805	0.056	301.8	450	5.81	50.0
6.000	MH26	MH27	14.000	0.600	2.177	1.904	0.273	51.3	375	5.09	50.0
6.001	MH27	MH28	7.100	0.600	1.829	1.805	0.024	295.8	450	5.19	50.0
5.004	MH28	MH29	10.000	0.600	1.805	1.772	0.033	303.0	450	5.95	50.0
5.005	MH29	MH30	20.400	0.600	0.753	0.685	0.068	300.0	600	6.20	50.0
5.006	MH30	MH31	27.600	0.600	0.685	0.593	0.092	300.0	600	6.52	50.0
5.007	MH31	MH32	12.000	0.600	0.593	0.553	0.040	300.0	600	6.67	50.0
5.008	MH32	MH33	19.000	0.600	0.553	0.489	0.064	296.9	600	6.89	50.0
5.009	MH33	MH34	12.600	0.600	0.489	0.447	0.042	300.0	600	7.04	50.0
4.006	MH34	MH35	6.000	0.600	0.447	0.427	0.020	300.0	600	7.11	50.0
1.008	MH35	MH36	13.100	0.600	0.427	0.400	0.027	485.2	600	7.31	50.0
1.009	MH36	PUMP AND GEO	5.000	0.600	0.400	0.390	0.010	500.0	600	7.39	50.0
1.010	PUMP AND GEO	MH37	20.000	0.600	0.400	2.600	-2.200	-9.1	600	7.73	50.0
1.011	MH37	MH38	7.300	0.600	2.600	2.500	0.100	73.0	375	7.79	50.0
1.012	MH38	SW-A-07	3.000	0.600	2.350	1.284	1.066	2.8	375	7.79	50.0
1.013	SW-A-07	40_OUT	10.000	0.600	0.984	0.964	0.020	500.0	675	7.93	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
5.003	1.165	185.2	10.8	1.289	1.345	0.080	0.0
6.000	2.535	280.0	2.7	1.048	1.321	0.020	0.0
6.001	1.177	187.1	6.8	1.321	1.345	0.050	0.0
5.004	1.162	184.9	23.0	1.345	1.528	0.170	0.0
5.005	1.400	396.0	28.5	2.397	2.815	0.210	0.0
5.006	1.400	396.0	33.9	2.815	2.907	0.250	0.0
5.007	1.400	396.0	39.3	2.907	2.947	0.290	0.0
5.008	1.408	398.1	50.8	2.947	3.011	0.375	0.0
5.009	1.400	396.0	62.3	3.011	2.953	0.460	0.0
4.006	1.400	396.0	115.2	2.953	2.873	0.850	0.0
1.008	1.099	310.6	199.2	2.873	2.825	1.470	0.0
1.009	1.082	305.9	210.1	2.825	3.060	1.550	0.0
1.010	1.000	282.7	220.9	3.050	0.850	1.630	0.0
1.011	2.122	234.4	220.9	1.075	0.875	1.630	0.0
1.012	10.863	1199.8	220.9	1.025	2.041	1.630	0.0
1.013	1.165	416.9	220.9	2.041	2.061	1.630	0.0

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	19.300	40.0	300	1 STANDARD	5.000	2.236	2.464	4.300	1.753	2.247
1.001	12.500	39.9	375	1 STANDARD	4.300	1.678	2.247	4.100	1.365	2.360
1.002	20.000	40.0	375	1 STANDARD	4.100	1.365	2.360	4.100	0.865	2.860
2.000	13.200	40.0	300	1 STANDARD	4.000	2.143	1.557	4.000	1.813	1.887

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	MH01	1500	Manhole	1 STANDARD	MH02	1500	Manhole	1 STANDARD
1.001	MH02	1500	Manhole	1 STANDARD	MH03	1500	Manhole	1 STANDARD
1.002	MH03	1500	Manhole	1 STANDARD	MH07	1800	Manhole	1 STANDARD
2.000	MH04	1500	Manhole	1 STANDARD	MH05	1500	Manhole	1 STANDARD

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
2.001	11.700	39.9	300	1 STANDARD	4.000	1.813	1.887	4.050	1.520	2.230
2.002	23.200	40.0	375	1 STANDARD	4.050	1.445	2.230	4.100	0.865	2.860
1.003	10.800	300.0	450	1 STANDARD	4.100	0.790	2.860	4.000	0.754	2.796
1.004	12.400	302.4	450	1 STANDARD	4.000	0.754	2.796	4.000	0.713	2.837
1.005	10.600	302.9	450	1 STANDARD	4.000	0.713	2.837	3.800	0.678	2.672
1.006	13.600	295.7	450	1 STANDARD	3.800	0.678	2.672	4.000	0.632	2.918
3.000	9.800	40.0	300	1 STANDARD	4.400	2.182	1.918	4.350	1.937	2.113
3.001	10.600	40.0	300	1 STANDARD	4.350	1.937	2.113	4.100	1.672	2.128
3.002	20.600	40.0	300	1 STANDARD	4.100	1.672	2.128	4.000	1.157	2.543
3.003	15.000	40.0	300	1 STANDARD	4.000	1.157	2.543	4.000	0.782	2.918
1.007	16.500	300.0	600	1 STANDARD	4.000	0.482	2.918	3.900	0.427	2.873
4.000	19.500	24.8	450	1 STANDARD	3.600	1.679	1.471	3.600	0.892	2.258
4.001	23.700	300.0	600	1 STANDARD	3.600	0.742	2.258	3.900	0.663	2.637
4.002	21.100	301.4	600	1 STANDARD	3.900	0.663	2.637	3.960	0.593	2.767
4.003	8.700	300.0	600	1 STANDARD	3.960	0.593	2.767	3.960	0.564	2.796
4.004	18.500	298.4	600	1 STANDARD	3.960	0.564	2.796	4.000	0.502	2.898
4.005	16.500	300.0	600	1 STANDARD	4.000	0.502	2.898	4.000	0.447	2.953
5.000	11.300	297.4	450	1 STANDARD	3.600	1.994	1.156	3.600	1.956	1.194
5.001	23.500	301.3	450	1 STANDARD	3.600	1.956	1.194	3.600	1.878	1.272
5.002	5.000	294.1	450	1 STANDARD	3.600	1.878	1.272	3.600	1.861	1.289
5.003	16.900	301.8	450	1 STANDARD	3.600	1.861	1.289	3.600	1.805	1.345
6.000	14.000	51.3	375	1 STANDARD	3.600	2.177	1.048	3.600	1.904	1.321
6.001	7.100	295.8	450	1 STANDARD	3.600	1.829	1.321	3.600	1.805	1.345
5.004	10.000	303.0	450	1 STANDARD	3.600	1.805	1.345	3.750	1.772	1.528
5.005	20.400	300.0	600	1 STANDARD	3.750	0.753	2.397	4.100	0.685	2.815

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
2.001	MH05	1500	Manhole	1 STANDARD	MH06	1500	Manhole	1 STANDARD
2.002	MH06	1500	Manhole	1 STANDARD	MH07	1800	Manhole	1 STANDARD
1.003	MH07	1800	Manhole	1 STANDARD	MH08	1800	Manhole	1 STANDARD
1.004	MH08	1800	Manhole	1 STANDARD	MH09	1800	Manhole	1 STANDARD
1.005	MH09	1800	Manhole	1 STANDARD	MH10	1800	Manhole	1 STANDARD
1.006	MH10	1800	Manhole	1 STANDARD	MH15	1800	Manhole	1 STANDARD
3.000	MH11	1500	Manhole	1 STANDARD	MH12	1500	Manhole	1 STANDARD
3.001	MH12	1500	Manhole	1 STANDARD	MH13	1500	Manhole	1 STANDARD
3.002	MH13	1500	Manhole	1 STANDARD	MH14	1500	Manhole	1 STANDARD
3.003	MH14	1500	Manhole	1 STANDARD	MH15	1800	Manhole	1 STANDARD
1.007	MH15	1800	Manhole	1 STANDARD	MH35	1800	Manhole	1 STANDARD
4.000	MH16	1800	Manhole	1 STANDARD	MH17	1800	Manhole	1 STANDARD
4.001	MH17	1800	Manhole	1 STANDARD	MH18	1800	Manhole	1 STANDARD
4.002	MH18	1800	Manhole	1 STANDARD	MH19	1800	Manhole	1 STANDARD
4.003	MH19	1800	Manhole	1 STANDARD	MH20	1800	Manhole	1 STANDARD
4.004	MH20	1800	Manhole	1 STANDARD	MH21	1800	Manhole	1 STANDARD
4.005	MH21	1800	Manhole	1 STANDARD	MH34	1800	Manhole	1 STANDARD
5.000	MH22	1800	Manhole	1 STANDARD	MH23	1800	Manhole	1 STANDARD
5.001	MH23	1800	Manhole	1 STANDARD	MH24	1800	Manhole	1 STANDARD
5.002	MH24	1800	Manhole	1 STANDARD	MH25	1800	Manhole	1 STANDARD
5.003	MH25	1800	Manhole	1 STANDARD	MH28	1800	Manhole	1 STANDARD
6.000	MH26	1500	Manhole	1 STANDARD	MH27	1800	Manhole	1 STANDARD
6.001	MH27	1800	Manhole	1 STANDARD	MH28	1800	Manhole	1 STANDARD
5.004	MH28	1800	Manhole	1 STANDARD	MH29	1800	Manhole	1 STANDARD
5.005	MH29	1800	Manhole	1 STANDARD	MH30	1800	Manhole	1 STANDARD

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
5.006	27.600	300.0	600	1 STANDARD	4.100	0.685	2.815	4.100	0.593	2.907
5.007	12.000	300.0	600	1 STANDARD	4.100	0.593	2.907	4.100	0.553	2.947
5.008	19.000	296.9	600	1 STANDARD	4.100	0.553	2.947	4.100	0.489	3.011
5.009	12.600	300.0	600	1 STANDARD	4.100	0.489	3.011	4.000	0.447	2.953
4.006	6.000	300.0	600	1 STANDARD	4.000	0.447	2.953	3.900	0.427	2.873
1.008	13.100	485.2	600	1 STANDARD	3.900	0.427	2.873	3.825	0.400	2.825
1.009	5.000	500.0	600	1 STANDARD	3.825	0.400	2.825	4.050	0.390	3.060
1.010	20.000	-9.1	600	1 STANDARD	4.050	0.400	3.050	4.050	2.600	0.850
1.011	7.300	73.0	375	1 STANDARD	4.050	2.600	1.075	3.750	2.500	0.875
1.012	3.000	2.8	375	1 STANDARD	3.750	2.350	1.025	3.700	1.284	2.041
1.013	10.000	500.0	675	1 STANDARD	3.700	0.984	2.041	3.700	0.964	2.061

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
5.006	MH30	1800	Manhole	1 STANDARD	MH31	1800	Manhole	1 STANDARD
5.007	MH31	1800	Manhole	1 STANDARD	MH32	1800	Manhole	1 STANDARD
5.008	MH32	1800	Manhole	1 STANDARD	MH33	1800	Manhole	1 STANDARD
5.009	MH33	1800	Manhole	1 STANDARD	MH34	1800	Manhole	1 STANDARD
4.006	MH34	1800	Manhole	1 STANDARD	MH35	1800	Manhole	1 STANDARD
1.008	MH35	1800	Manhole	1 STANDARD	MH36	1800	Manhole	1 STANDARD
1.009	MH36	1800	Manhole	1 STANDARD	PUMP AND GEO	1800	Manhole	1 STANDARD
1.010	PUMP AND GEO	1800	Manhole	1 STANDARD	MH37	1200	Manhole	1 STANDARD
1.011	MH37	1200	Manhole	1 STANDARD	MH38	1200	Manhole	1 STANDARD
1.012	MH38	1200	Manhole	1 STANDARD	SW-A-07	1800	Manhole	1 STANDARD
1.013	SW-A-07	1800	Manhole	1 STANDARD	40_OUT	1200	Manhole	1 STANDARD

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
MH01	283.075	785.500	5.000	2.764	1500		0	1.000	2.236	300
MH02	302.375	785.500	4.300	2.622	1500		1	1.000	1.753	300
MH03	314.875	785.500	4.100	2.735	1500		0	1.001	1.678	375
MH04	334.875	833.600	4.000	1.857	1500		1	1.001	1.365	375
MH05	334.875	820.400	4.000	2.187	1500		0	2.000	2.143	300
							1	2.000	1.813	300
							0	2.001	1.813	300

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
MH06	334.875	808.700	4.050	2.605	1500		1 2.001	1.520	300
							0 2.002	1.445	375
MH07	334.875	785.500	4.100	3.310	1800		1 2.002	0.865	375
							2 1.002	0.865	375
							0 1.003	0.790	450
MH08	345.675	785.500	4.000	3.246	1800		1 1.003	0.754	450
							0 1.004	0.754	450
MH09	358.075	785.500	4.000	3.287	1800		1 1.004	0.713	450
							0 1.005	0.713	450
MH10	368.675	785.500	3.800	3.122	1800		1 1.005	0.678	450
							0 1.006	0.678	450
MH11	382.275	841.500	4.400	2.218	1500				
							0 3.000	2.182	300
MH12	382.275	831.700	4.350	2.413	1500		1 3.000	1.937	300
							0 3.001	1.937	300
MH13	382.275	821.100	4.100	2.428	1500		1 3.001	1.672	300
							0 3.002	1.672	300
MH14	382.275	800.500	4.000	2.843	1500		1 3.002	1.157	300
							0 3.003	1.157	300
MH15	382.275	785.500	4.000	3.518	1800		1 3.003	0.782	300
							2 1.006	0.632	450
							0 1.007	0.482	600
MH16	398.775	899.500	3.600	1.921	1800				
							0 4.000	1.679	450
MH17	398.775	880.000	3.600	2.858	1800		1 4.000	0.892	450
							0 4.001	0.742	600
MH18	398.775	856.300	3.900	3.237	1800		1 4.001	0.663	600
							0 4.002	0.663	600

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
MH19	398.775	835.200	3.960	3.367	1800		1 4.002	0.593	600
MH20	398.775	826.500	3.960	3.396	1800		0 4.003	0.593	600
MH21	398.775	808.000	4.000	3.498	1800		1 4.003	0.564	600
MH22	557.075	791.500	3.600	1.606	1800		0 4.004	0.564	600
MH23	545.775	791.500	3.600	1.644	1800		1 4.004	0.502	600
MH24	522.275	791.500	3.600	1.722	1800		0 4.005	0.502	600
MH25	517.275	791.500	3.600	1.739	1800		0 5.000	1.994	450
MH26	500.375	770.400	3.600	1.423	1500		1 5.000	1.956	450
MH27	500.375	784.400	3.600	1.771	1800		0 5.001	1.956	450
MH28	490.375	791.500	3.750	2.997	1800		1 5.001	1.878	450
MH29	469.975	791.500	4.100	3.415	1800		0 5.002	1.878	450
MH30	442.375	791.500	4.100	3.507	1800		1 5.002	1.861	450
MH31							0 5.003	1.861	450
MH32							0 6.000	2.177	375
MH33							1 6.000	1.904	375
MH34							0 6.001	1.829	450
MH35							1 6.001	1.805	450
MH36							2 5.003	1.805	450
MH37							0 5.004	1.805	450
MH38							1 5.004	1.772	450
MH39							0 5.005	0.753	600
MH40							1 5.005	0.685	600
MH41							0 5.006	0.685	600
MH42							1 5.006	0.593	600
MH43							0 5.007	0.593	600

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
MH32	430.375	791.500	4.100	3.547	1800	0 ← ○ → 1	1	5.007	0.553	600
MH33	411.375	791.500	4.100	3.611	1800	0 ← ○ → 1	0	5.008	0.553	600
MH34	398.775	791.500	4.000	3.553	1800	○ → 1 ○ → 2 ○ ↓ 0	1	5.009	0.447	600
MH35	398.775	785.500	3.900	3.473	1800	○ → 1 ○ → 2	2	4.005	0.447	600
MH36	411.875	785.500	3.825	3.425	1800	○ → 0	0	4.006	0.447	600
PUMP AND GEO	416.875	785.500	4.050	3.660	1800	○ → 0	1	1.007	0.427	600
MH37	436.875	785.500	4.050	1.450	1200	○ → 0	0	1.008	0.427	600
MH38	444.175	785.500	3.750	1.400	1200	○ → 0	1	1.008	0.400	600
SW-A-07	447.175	785.500	3.700	2.716	1800	○ → 0	0	1.009	0.400	600
40_OUT	457.175	785.500	3.700	2.736	1200	○	1	1.010	0.390	600
							0	1.010	0.400	600
							1	1.010	2.600	600
							0	1.011	2.600	375
							1	1.011	2.500	375
							0	1.012	2.350	375
							1	1.012	1.284	375
							0	1.013	0.984	675
							1	1.013	0.964	675

Simulation Settings

Rainfall Methodology	FEH-13	Analysis Speed	Detailed	Additional Storage (m ³ /ha)	0.0
Summer CV	0.750	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	0.840	Drain Down Time (mins)	1440	Check Discharge Volume	x

Storm Durations

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

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
30	40	0	0
100	0	0	0
100	45	0	0

Node PUMP AND GEO Online Depth/Flow Control

Flap Valve x | Replaces Downstream Link x | Invert Level (m) 0.400

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	65.000	0.600	65.000	1.100	65.000	1.600	65.000	2.100	65.000	2.600	65.000
0.200	65.000	0.700	65.000	1.200	65.000	1.700	65.000	2.200	65.000	2.700	65.000
0.300	65.000	0.800	65.000	1.300	65.000	1.800	65.000	2.300	65.000	2.800	65.000
0.400	65.000	0.900	65.000	1.400	65.000	1.900	65.000	2.400	65.000	2.900	65.000
0.500	65.000	1.000	65.000	1.500	65.000	2.000	65.000	2.500	65.000	3.000	65.000

Node PUMP AND GEO Depth/Area Storage Structure

Base Inf Coefficient (m/hr) 0.00000 | Safety Factor 2.0 | Invert Level (m) 0.400
 Side Inf Coefficient (m/hr) 0.00000 | Porosity 0.95 | Time to half empty (mins) 96

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	322.6	0.0	1.320	322.6	0.0	1.981	0.0	0.0
0.660	322.6	0.0	1.980	322.6	0.0			

Results for 2 year Critical Storm Duration. Lowest mass balance: 93.80%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute winter	MH01	10	2.263	0.027	3.0	0.0481	0.0000	OK
15 minute winter	MH02	10	1.714	0.036	6.0	0.0630	0.0000	OK
15 minute summer	MH03	9	1.409	0.044	9.7	0.0775	0.0000	OK
15 minute winter	MH04	10	2.170	0.027	3.0	0.0478	0.0000	OK
15 minute summer	MH05	9	1.857	0.044	8.1	0.0784	0.0000	OK
15 minute summer	MH06	9	1.496	0.051	13.2	0.0905	0.0000	OK
15 minute summer	MH07	10	0.937	0.147	31.3	0.3746	0.0000	OK
15 minute summer	MH08	10	0.919	0.165	38.2	0.4203	0.0000	OK
15 minute summer	MH09	10	0.895	0.182	47.9	0.4643	0.0000	OK
15 minute summer	MH10	10	0.861	0.183	57.5	0.4669	0.0000	OK
15 minute winter	MH11	10	2.215	0.033	4.4	0.0575	0.0000	OK
15 minute summer	MH12	9	1.984	0.047	9.4	0.0828	0.0000	OK
15 minute summer	MH13	9	1.729	0.057	14.6	0.1012	0.0000	OK
15 minute summer	MH14	9	1.227	0.070	19.7	0.1231	0.0000	OK
15 minute winter	MH15	11	0.781	0.299	83.7	0.7620	0.0000	OK
15 minute winter	MH16	10	1.716	0.037	8.9	0.0944	0.0000	OK
15 minute summer	MH17	10	0.825	0.083	16.8	0.2106	0.0000	OK
15 minute winter	MH18	12	0.796	0.133	24.5	0.3391	0.0000	OK
15 minute winter	MH19	11	0.793	0.200	31.6	0.5082	0.0000	OK
15 minute winter	MH20	11	0.791	0.227	32.2	0.5790	0.0000	OK
15 minute winter	MH21	11	0.790	0.288	36.3	0.7319	0.0000	OK
15 minute winter	MH22	10	2.033	0.039	3.0	0.0986	0.0000	OK
15 minute winter	MH23	10	2.010	0.054	6.0	0.1382	0.0000	OK
15 minute summer	MH24	10	1.953	0.075	9.0	0.1917	0.0000	OK
15 minute summer	MH25	10	1.939	0.078	11.9	0.1978	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute winter	MH01	1.000	MH02	2.9	0.936	0.017	0.0602	
15 minute winter	MH02	1.001	MH03	6.0	0.978	0.019	0.0774	
15 minute summer	MH03	1.002	MH07	9.3	1.108	0.029	0.2192	
15 minute winter	MH04	2.000	MH05	3.0	0.657	0.017	0.0626	
15 minute summer	MH05	2.001	MH06	7.7	1.233	0.044	0.0735	
15 minute summer	MH06	2.002	MH07	12.9	1.262	0.041	0.2740	
15 minute summer	MH07	1.003	MH08	30.3	0.634	0.163	0.5277	
15 minute summer	MH08	1.004	MH09	38.5	0.682	0.208	0.7003	
15 minute summer	MH09	1.005	MH10	48.1	0.795	0.260	0.6410	
15 minute summer	MH10	1.006	MH15	57.4	1.015	0.307	0.7696	
15 minute winter	MH11	3.000	MH12	4.4	0.829	0.025	0.0539	
15 minute summer	MH12	3.001	MH13	9.1	1.120	0.052	0.0867	
15 minute summer	MH13	3.002	MH14	14.2	1.310	0.081	0.2239	
15 minute summer	MH14	3.003	MH15	19.1	1.602	0.109	0.1791	
15 minute summer	MH15	1.007	MH35	84.1	0.588	0.212	2.5058	
15 minute winter	MH16	4.000	MH17	8.8	1.448	0.013	0.1181	
15 minute winter	MH17	4.001	MH18	16.8	0.597	0.042	0.7876	
15 minute winter	MH18	4.002	MH19	23.1	0.583	0.059	1.3388	
15 minute winter	MH19	4.003	MH20	25.2	0.587	0.064	0.7824	
15 minute winter	MH20	4.004	MH21	32.6	0.530	0.082	2.1396	
15 minute winter	MH21	4.005	MH34	40.5	0.314	0.102	2.4571	
15 minute winter	MH22	5.000	MH23	2.9	0.343	0.016	0.0981	
15 minute winter	MH23	5.001	MH24	5.9	0.423	0.032	0.3308	
15 minute summer	MH24	5.002	MH25	8.8	0.495	0.047	0.0891	
15 minute summer	MH25	5.003	MH28	11.7	0.465	0.063	0.4349	

Results for 2 year Critical Storm Duration. Lowest mass balance: 93.80%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute winter	MH26	10	2.205	0.028	3.0	0.0487	0.0000	OK
15 minute summer	MH27	10	1.925	0.096	8.0	0.2453	0.0000	OK
15 minute summer	MH28	10	1.923	0.118	25.3	0.3015	0.0000	OK
15 minute summer	MH29	10	0.873	0.120	31.2	0.3042	0.0000	OK
15 minute winter	MH30	11	0.809	0.124	37.0	0.3152	0.0000	OK
15 minute winter	MH31	11	0.801	0.208	41.8	0.5305	0.0000	OK
15 minute winter	MH32	11	0.796	0.243	50.3	0.6185	0.0000	OK
15 minute winter	MH33	11	0.791	0.302	58.3	0.7682	0.0000	OK
15 minute winter	MH34	11	0.786	0.339	101.5	0.8640	0.0000	OK
15 minute winter	MH35	11	0.775	0.348	183.1	0.8858	0.0000	OK
15 minute winter	MH36	11	0.706	0.306	193.1	0.7795	0.0000	OK
30 minute winter	PUMP AND GEO	26	0.612	0.222	164.0	65.6563	0.0000	OK
15 minute winter	MH37	12	2.758	0.158	65.1	0.1793	0.0000	OK
15 minute summer	MH38	12	2.415	0.065	65.7	0.0737	0.0000	OK
30 minute summer	SW-A-07	18	1.700	0.716	65.1	1.8235	0.0000	SURCHARGED
15 minute summer	40_OUT	1	1.639	0.675	83.4	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute winter	MH26	6.000	MH27	2.9	0.825	0.010	0.0497	
15 minute winter	MH27	6.001	MH28	7.4	0.284	0.040	0.2051	
15 minute summer	MH28	5.004	MH29	24.9	0.804	0.135	0.3101	
15 minute summer	MH29	5.005	MH30	31.1	0.769	0.079	0.8255	
15 minute summer	MH30	5.006	MH31	36.6	0.686	0.092	1.7121	
15 minute summer	MH31	5.007	MH32	38.9	0.548	0.098	1.1239	
15 minute winter	MH32	5.008	MH33	48.3	0.472	0.121	2.3648	
15 minute summer	MH33	5.009	MH34	58.5	0.390	0.148	1.8925	
15 minute winter	MH34	4.006	MH35	105.0	0.689	0.265	1.0017	
15 minute winter	MH35	1.008	MH36	183.9	1.171	0.592	2.0572	
15 minute winter	MH36	1.009	PUMP AND GEO	201.2	2.469	0.658	0.4878	
15 minute winter	PUMP AND GEO	1.010	MH37	65.1	0.319	0.230	3.4108	
15 minute winter	MH37	1.011	MH38	66.3	1.663	0.283	0.2912	
15 minute winter	MH38	1.012	SW-A-07	68.9	3.321	0.057	0.1790	
15 minute summer	SW-A-07	1.013	40_OUT	83.4	0.235	0.200	3.5601	88.4

Results for 30 year Critical Storm Duration. Lowest mass balance: 93.80%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute winter	MH01	10	2.279	0.043	7.8	0.0768	0.0000	OK
15 minute summer	MH02	9	1.736	0.058	16.3	0.1026	0.0000	OK
15 minute summer	MH03	9	1.436	0.071	25.6	0.1246	0.0000	OK
15 minute winter	MH04	10	2.186	0.043	7.8	0.0752	0.0000	OK
15 minute summer	MH05	9	1.887	0.074	21.3	0.1308	0.0000	OK
15 minute summer	MH06	9	1.528	0.083	35.0	0.1458	0.0000	OK
15 minute winter	MH07	11	1.139	0.349	79.9	0.8892	0.0000	OK
15 minute winter	MH08	11	1.130	0.376	91.0	0.9561	0.0000	OK
15 minute winter	MH09	11	1.114	0.401	110.6	1.0193	0.0000	OK
15 minute winter	MH10	11	1.094	0.416	130.3	1.0590	0.0000	OK
15 minute winter	MH11	10	2.234	0.052	11.7	0.0918	0.0000	OK
15 minute summer	MH12	9	2.016	0.079	24.8	0.1397	0.0000	OK
15 minute summer	MH13	9	1.768	0.096	38.7	0.1705	0.0000	OK
15 minute summer	MH14	9	1.273	0.116	52.1	0.2050	0.0000	OK
60 minute winter	MH15	50	1.084	0.602	103.7	1.5308	0.0000	SURCHARGED
15 minute winter	MH16	10	1.737	0.058	23.4	0.1464	0.0000	OK
15 minute winter	MH17	11	1.106	0.364	44.3	0.9272	0.0000	OK
15 minute winter	MH18	11	1.107	0.444	51.4	1.1289	0.0000	OK
15 minute winter	MH19	11	1.099	0.506	67.0	1.2888	0.0000	OK
15 minute winter	MH20	11	1.097	0.533	85.2	1.3571	0.0000	OK
15 minute winter	MH21	11	1.091	0.589	99.3	1.5001	0.0000	OK
15 minute winter	MH22	10	2.059	0.065	7.8	0.1648	0.0000	OK
15 minute summer	MH23	10	2.043	0.087	16.1	0.2218	0.0000	OK
15 minute summer	MH24	10	2.029	0.151	24.5	0.3831	0.0000	OK
15 minute summer	MH25	10	2.020	0.159	32.0	0.4053	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute winter	MH01	1.000	MH02	7.7	1.243	0.043	0.1190	
15 minute summer	MH02	1.001	MH03	16.0	1.283	0.050	0.1570	
15 minute summer	MH03	1.002	MH07	25.0	1.117	0.079	0.9301	
15 minute winter	MH04	2.000	MH05	7.7	0.863	0.044	0.1267	
15 minute summer	MH05	2.001	MH06	20.6	1.609	0.117	0.1500	
15 minute summer	MH06	2.002	MH07	34.4	1.257	0.108	1.1174	
15 minute summer	MH07	1.003	MH08	72.3	0.659	0.389	1.3904	
15 minute summer	MH08	1.004	MH09	89.3	0.723	0.483	1.7142	
15 minute summer	MH09	1.005	MH10	111.0	0.854	0.600	1.5378	
15 minute summer	MH10	1.006	MH15	131.9	1.079	0.705	2.0489	
15 minute winter	MH11	3.000	MH12	11.6	1.074	0.066	0.1109	
15 minute summer	MH12	3.001	MH13	24.3	1.429	0.138	0.1821	
15 minute summer	MH13	3.002	MH14	37.7	1.723	0.214	0.4602	
15 minute summer	MH14	3.003	MH15	51.8	1.882	0.294	0.6507	
15 minute summer	MH15	1.007	MH35	200.8	0.748	0.507	4.6008	
15 minute winter	MH16	4.000	MH17	23.2	1.760	0.036	0.8367	
15 minute summer	MH17	4.001	MH18	39.6	0.653	0.100	4.5554	
15 minute summer	MH18	4.002	MH19	60.1	0.576	0.152	4.8154	
15 minute summer	MH19	4.003	MH20	75.0	0.589	0.190	2.1858	
15 minute summer	MH20	4.004	MH21	92.2	0.552	0.232	4.9402	
15 minute summer	MH21	4.005	MH34	107.2	0.392	0.271	4.6080	
15 minute winter	MH22	5.000	MH23	7.6	0.445	0.041	0.2003	
15 minute summer	MH23	5.001	MH24	15.7	0.494	0.085	0.7980	
15 minute summer	MH24	5.002	MH25	23.7	0.513	0.126	0.2415	
15 minute summer	MH25	5.003	MH28	31.9	0.547	0.172	1.0116	

Results for 30 year Critical Storm Duration. Lowest mass balance: 93.80%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	MH26	10	2.220	0.043	7.8	0.0752	0.0000	OK
15 minute summer	MH27	10	2.011	0.182	21.3	0.4632	0.0000	OK
15 minute summer	MH28	10	2.008	0.203	68.0	0.5177	0.0000	OK
15 minute winter	MH29	11	1.129	0.376	83.0	0.9574	0.0000	OK
15 minute winter	MH30	11	1.124	0.439	93.2	1.1175	0.0000	OK
15 minute winter	MH31	11	1.108	0.515	98.2	1.3102	0.0000	OK
15 minute winter	MH32	11	1.103	0.550	121.4	1.3986	0.0000	OK
15 minute winter	MH33	11	1.091	0.602	147.4	1.5321	0.0000	SURCHARGED
60 minute winter	MH34	49	1.084	0.637	129.0	1.6208	0.0000	SURCHARGED
60 minute winter	MH35	49	1.083	0.656	239.0	1.6704	0.0000	SURCHARGED
60 minute winter	MH36	50	1.081	0.681	250.9	1.7344	0.0000	SURCHARGED
60 minute winter	PUMP AND GEO	50	1.080	0.690	263.3	210.2939	0.0000	SURCHARGED
30 minute winter	MH37	13	2.758	0.158	65.0	0.1783	0.0000	OK
15 minute summer	MH38	10	2.418	0.068	65.0	0.0771	0.0000	OK
60 minute summer	SW-A-07	18	1.668	0.684	65.0	1.7400	0.0000	SURCHARGED
15 minute summer	40_OUT	1	1.639	0.675	105.2	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	MH26	6.000	MH27	7.7	0.823	0.028	0.2262	
15 minute winter	MH27	6.001	MH28	19.6	0.330	0.105	0.4560	
15 minute summer	MH28	5.004	MH29	67.5	1.051	0.365	0.6419	
15 minute winter	MH29	5.005	MH30	77.7	0.803	0.196	4.1511	
15 minute winter	MH30	5.006	MH31	86.1	0.676	0.218	6.6015	
15 minute winter	MH31	5.007	MH32	101.9	0.556	0.257	3.1666	
15 minute winter	MH32	5.008	MH33	122.4	0.518	0.307	5.2434	
15 minute winter	MH33	5.009	MH34	147.0	0.522	0.371	3.5482	
15 minute winter	MH34	4.006	MH35	266.4	0.946	0.673	1.6901	
15 minute winter	MH35	1.008	MH36	471.3	1.732	1.517	3.6248	
15 minute summer	MH36	1.009	PUMP AND GEO	525.0	2.820	1.716	1.3117	
15 minute summer	PUMP AND GEO	1.010	MH37	73.8	0.363	0.261	3.4030	
30 minute winter	MH37	1.011	MH38	65.6	1.659	0.280	0.2891	
30 minute winter	MH38	1.012	SW-A-07	65.7	4.676	0.055	0.1816	
30 minute winter	SW-A-07	1.013	40_OUT	124.8	0.350	0.299	3.5680	373.2

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 93.80%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute winter	MH01	10	2.288	0.052	10.9	0.0910	0.0000	OK
15 minute summer	MH02	9	1.748	0.070	22.9	0.1228	0.0000	OK
15 minute winter	MH03	11	1.543	0.178	34.7	0.3146	0.0000	OK
15 minute winter	MH04	10	2.193	0.050	10.9	0.0886	0.0000	OK
15 minute summer	MH05	9	1.902	0.089	29.9	0.1575	0.0000	OK
15 minute summer	MH06	9	1.543	0.098	49.2	0.1731	0.0000	OK
15 minute winter	MH07	11	1.549	0.759	112.3	1.9317	0.0000	SURCHARGED
15 minute winter	MH08	11	1.534	0.780	120.6	1.9849	0.0000	SURCHARGED
60 minute winter	MH09	57	1.523	0.810	72.4	2.0614	0.0000	SURCHARGED
60 minute winter	MH10	57	1.523	0.845	85.0	2.1497	0.0000	SURCHARGED
15 minute winter	MH11	10	2.244	0.062	16.4	0.1101	0.0000	OK
15 minute summer	MH12	9	2.033	0.096	34.7	0.1695	0.0000	OK
15 minute summer	MH13	9	1.789	0.117	54.2	0.2073	0.0000	OK
60 minute winter	MH14	57	1.523	0.366	33.4	0.6461	0.0000	SURCHARGED
60 minute winter	MH15	58	1.522	1.040	129.9	2.6473	0.0000	SURCHARGED
15 minute winter	MH16	10	1.747	0.068	32.7	0.1719	0.0000	OK
60 minute winter	MH17	57	1.523	0.781	30.5	1.9872	0.0000	SURCHARGED
60 minute winter	MH18	57	1.523	0.860	37.3	2.1881	0.0000	SURCHARGED
60 minute winter	MH19	57	1.523	0.930	41.3	2.3662	0.0000	SURCHARGED
60 minute winter	MH20	57	1.523	0.959	49.1	2.4399	0.0000	SURCHARGED
60 minute winter	MH21	57	1.523	1.021	58.4	2.5974	0.0000	SURCHARGED
15 minute winter	MH22	11	2.081	0.087	10.9	0.2211	0.0000	OK
15 minute summer	MH23	10	2.076	0.120	22.6	0.3055	0.0000	OK
15 minute summer	MH24	10	2.069	0.191	33.0	0.4849	0.0000	OK
15 minute summer	MH25	10	2.062	0.201	42.2	0.5104	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute winter	MH01	1.000	MH02	10.7	1.369	0.061	0.1516	
15 minute summer	MH02	1.001	MH03	22.6	1.402	0.071	0.2547	
15 minute summer	MH03	1.002	MH07	35.3	1.115	0.111	1.4002	
15 minute winter	MH04	2.000	MH05	10.8	0.944	0.061	0.1628	
15 minute summer	MH05	2.001	MH06	29.0	1.758	0.164	0.1930	
15 minute summer	MH06	2.002	MH07	48.5	1.262	0.153	1.5351	
15 minute summer	MH07	1.003	MH08	101.8	0.654	0.548	1.7112	
15 minute summer	MH08	1.004	MH09	127.2	0.803	0.688	1.9647	
15 minute summer	MH09	1.005	MH10	154.4	0.975	0.835	1.6795	
15 minute summer	MH10	1.006	MH15	181.2	1.144	0.968	2.1548	
15 minute winter	MH11	3.000	MH12	16.3	1.160	0.092	0.1449	
15 minute summer	MH12	3.001	MH13	34.0	1.554	0.193	0.2380	
15 minute summer	MH13	3.002	MH14	52.6	1.881	0.299	0.7892	
15 minute summer	MH14	3.003	MH15	73.8	1.786	0.419	0.9613	
15 minute summer	MH15	1.007	MH35	269.9	0.958	0.682	4.6477	
15 minute winter	MH16	4.000	MH17	32.5	1.766	0.050	1.6897	
15 minute summer	MH17	4.001	MH18	57.5	0.649	0.145	6.6758	
15 minute summer	MH18	4.002	MH19	77.0	0.579	0.195	5.9434	
15 minute summer	MH19	4.003	MH20	104.8	0.590	0.265	2.4506	
15 minute summer	MH20	4.004	MH21	130.4	0.550	0.328	5.2110	
15 minute summer	MH21	4.005	MH34	149.7	0.532	0.378	4.6477	
15 minute winter	MH22	5.000	MH23	10.9	0.456	0.058	0.3112	
15 minute winter	MH23	5.001	MH24	21.4	0.503	0.115	1.1418	
15 minute winter	MH24	5.002	MH25	31.9	0.533	0.170	0.3281	
15 minute winter	MH25	5.003	MH28	42.4	0.584	0.229	1.3100	

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 93.80%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	MH26	10	2.227	0.050	10.9	0.0882	0.0000	OK
15 minute summer	MH27	10	2.053	0.224	29.8	0.5698	0.0000	OK
15 minute summer	MH28	10	2.050	0.245	93.3	0.6227	0.0000	OK
15 minute winter	MH29	11	1.533	0.780	115.3	1.9861	0.0000	SURCHARGED
15 minute winter	MH30	11	1.529	0.844	124.9	2.1484	0.0000	SURCHARGED
60 minute winter	MH31	57	1.523	0.930	63.2	2.3668	0.0000	SURCHARGED
60 minute winter	MH32	57	1.523	0.970	79.5	2.4684	0.0000	SURCHARGED
60 minute winter	MH33	57	1.523	1.034	97.5	2.6308	0.0000	SURCHARGED
60 minute winter	MH34	57	1.522	1.075	170.5	2.7371	0.0000	SURCHARGED
60 minute winter	MH35	58	1.522	1.095	299.2	2.7869	0.0000	SURCHARGED
60 minute winter	MH36	58	1.520	1.120	317.1	2.8512	0.0000	SURCHARGED
60 minute winter	PUMP AND GEO	58	1.519	1.129	336.5	345.8677	0.0000	SURCHARGED
15 minute summer	MH37	10	2.759	0.159	65.2	0.1795	0.0000	OK
15 minute winter	MH38	9	2.418	0.068	65.0	0.0774	0.0000	OK
30 minute winter	SW-A-07	12	1.672	0.688	65.0	1.7518	0.0000	SURCHARGED
15 minute summer	40_OUT	1	1.639	0.675	123.5	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	MH26	6.000	MH27	10.8	0.852	0.039	0.3412	
15 minute summer	MH27	6.001	MH28	28.0	0.345	0.150	0.5921	
15 minute summer	MH28	5.004	MH29	93.8	1.159	0.507	0.8087	
15 minute summer	MH29	5.005	MH30	110.1	0.810	0.278	5.7462	
15 minute summer	MH30	5.006	MH31	144.8	0.660	0.366	7.7743	
15 minute summer	MH31	5.007	MH32	152.5	0.551	0.385	3.3801	
15 minute winter	MH32	5.008	MH33	190.6	0.677	0.479	5.3519	
15 minute winter	MH33	5.009	MH34	226.8	0.805	0.573	3.5491	
15 minute winter	MH34	4.006	MH35	388.4	1.379	0.981	1.6901	
15 minute winter	MH35	1.008	MH36	675.0	2.397	2.173	3.6900	
15 minute winter	MH36	1.009	PUMP AND GEO	715.2	2.943	2.338	1.4084	
15 minute winter	PUMP AND GEO	1.010	MH37	73.7	0.362	0.261	3.4029	
15 minute summer	MH37	1.011	MH38	65.9	1.656	0.281	0.2909	
15 minute summer	MH38	1.012	SW-A-07	65.9	4.800	0.055	0.1814	
15 minute summer	SW-A-07	1.013	40_OUT	123.5	0.347	0.296	3.5671	357.8

Results for 100 year Critical Storm Duration. Lowest mass balance: 93.80%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute winter	MH01	10	2.286	0.050	10.1	0.0876	0.0000	OK
15 minute summer	MH02	9	1.745	0.067	21.3	0.1181	0.0000	OK
15 minute summer	MH03	9	1.445	0.080	33.4	0.1421	0.0000	OK
15 minute winter	MH04	10	2.191	0.048	10.1	0.0854	0.0000	OK
15 minute summer	MH05	9	1.899	0.086	27.8	0.1513	0.0000	OK
15 minute summer	MH06	9	1.539	0.094	45.8	0.1669	0.0000	OK
15 minute winter	MH07	11	1.435	0.645	104.4	1.6410	0.0000	SURCHARGED
60 minute winter	MH08	57	1.433	0.679	57.7	1.7274	0.0000	SURCHARGED
60 minute winter	MH09	57	1.432	0.719	70.4	1.8310	0.0000	SURCHARGED
60 minute winter	MH10	57	1.432	0.754	82.8	1.9191	0.0000	SURCHARGED
15 minute winter	MH11	10	2.242	0.060	15.2	0.1056	0.0000	OK
15 minute summer	MH12	9	2.029	0.092	32.3	0.1626	0.0000	OK
15 minute summer	MH13	9	1.784	0.112	50.5	0.1981	0.0000	OK
60 minute winter	MH14	57	1.432	0.275	31.5	0.4854	0.0000	OK
60 minute winter	MH15	57	1.431	0.949	125.7	2.4164	0.0000	SURCHARGED
15 minute winter	MH16	10	1.744	0.065	30.4	0.1659	0.0000	OK
60 minute winter	MH17	57	1.432	0.690	28.8	1.7556	0.0000	SURCHARGED
60 minute winter	MH18	57	1.432	0.769	34.9	1.9568	0.0000	SURCHARGED
60 minute winter	MH19	57	1.432	0.839	40.0	2.1349	0.0000	SURCHARGED
60 minute winter	MH20	57	1.432	0.868	46.6	2.2087	0.0000	SURCHARGED
60 minute winter	MH21	57	1.432	0.930	53.8	2.3664	0.0000	SURCHARGED
15 minute winter	MH22	11	2.073	0.079	10.1	0.2016	0.0000	OK
15 minute summer	MH23	10	2.067	0.111	21.0	0.2819	0.0000	OK
15 minute summer	MH24	10	2.059	0.181	31.5	0.4611	0.0000	OK
15 minute summer	MH25	10	2.052	0.191	39.8	0.4863	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute winter	MH01	1.000	MH02	10.0	1.340	0.057	0.1436	
15 minute summer	MH02	1.001	MH03	20.9	1.379	0.066	0.1908	
15 minute summer	MH03	1.002	MH07	32.7	1.119	0.103	1.2719	
15 minute winter	MH04	2.000	MH05	10.0	0.926	0.057	0.1540	
15 minute summer	MH05	2.001	MH06	27.0	1.726	0.153	0.1829	
15 minute summer	MH06	2.002	MH07	45.1	1.261	0.142	1.5225	
15 minute winter	MH07	1.003	MH08	91.0	0.658	0.490	1.7112	
15 minute winter	MH08	1.004	MH09	114.7	0.724	0.620	1.9647	
15 minute winter	MH09	1.005	MH10	143.5	0.906	0.776	1.6795	
15 minute winter	MH10	1.006	MH15	170.7	1.078	0.912	2.1548	
15 minute winter	MH11	3.000	MH12	15.1	1.140	0.086	0.1362	
15 minute summer	MH12	3.001	MH13	31.7	1.508	0.180	0.2241	
15 minute summer	MH13	3.002	MH14	49.4	1.837	0.280	0.5669	
15 minute summer	MH14	3.003	MH15	71.2	1.751	0.404	0.7610	
15 minute summer	MH15	1.007	MH35	266.1	0.945	0.672	4.6477	
15 minute winter	MH16	4.000	MH17	30.2	1.730	0.046	1.6782	
15 minute winter	MH17	4.001	MH18	56.2	0.639	0.142	6.6758	
15 minute summer	MH18	4.002	MH19	73.8	0.582	0.187	5.9434	
15 minute summer	MH19	4.003	MH20	95.5	0.605	0.241	2.4506	
15 minute summer	MH20	4.004	MH21	121.7	0.555	0.307	5.2110	
15 minute summer	MH21	4.005	MH34	141.2	0.501	0.357	4.6477	
15 minute winter	MH22	5.000	MH23	10.0	0.459	0.053	0.2740	
15 minute winter	MH23	5.001	MH24	19.6	0.501	0.106	1.0488	
15 minute winter	MH24	5.002	MH25	29.5	0.528	0.157	0.3064	
15 minute summer	MH25	5.003	MH28	39.9	0.573	0.215	1.2513	

Results for 100 year Critical Storm Duration. Lowest mass balance: 93.80%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	MH26	10	2.225	0.048	10.1	0.0850	0.0000	OK
15 minute summer	MH27	10	2.044	0.215	27.8	0.5468	0.0000	OK
15 minute summer	MH28	10	2.041	0.236	87.5	0.5997	0.0000	OK
60 minute winter	MH29	57	1.432	0.679	54.7	1.7283	0.0000	SURCHARGED
60 minute winter	MH30	57	1.432	0.747	60.2	1.9013	0.0000	SURCHARGED
60 minute winter	MH31	57	1.432	0.839	61.3	2.1354	0.0000	SURCHARGED
60 minute winter	MH32	57	1.432	0.879	76.4	2.2370	0.0000	SURCHARGED
60 minute winter	MH33	57	1.432	0.943	93.3	2.3997	0.0000	SURCHARGED
60 minute winter	MH34	57	1.432	0.985	153.7	2.5062	0.0000	SURCHARGED
60 minute winter	MH35	57	1.431	1.004	289.2	2.5557	0.0000	SURCHARGED
60 minute winter	MH36	58	1.429	1.029	306.3	2.6197	0.0000	SURCHARGED
60 minute winter	PUMP AND GEO	58	1.428	1.038	324.0	317.8018	0.0000	SURCHARGED
30 minute winter	MH37	12	2.758	0.158	65.1	0.1791	0.0000	OK
15 minute winter	MH38	9	2.415	0.065	65.1	0.0730	0.0000	OK
30 minute winter	SW-A-07	13	1.664	0.680	65.8	1.7294	0.0000	SURCHARGED
15 minute summer	40_OUT	1	1.639	0.675	72.0	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	MH26	6.000	MH27	10.0	0.869	0.036	0.3146	
15 minute summer	MH27	6.001	MH28	26.0	0.344	0.139	0.5633	
15 minute summer	MH28	5.004	MH29	87.8	1.137	0.475	0.7724	
15 minute winter	MH29	5.005	MH30	99.0	0.808	0.250	5.7462	
15 minute summer	MH30	5.006	MH31	113.9	0.658	0.288	7.7743	
15 minute summer	MH31	5.007	MH32	133.1	0.563	0.336	3.3801	
15 minute summer	MH32	5.008	MH33	161.8	0.575	0.407	5.3519	
15 minute winter	MH33	5.009	MH34	192.1	0.682	0.485	3.5491	
15 minute summer	MH34	4.006	MH35	358.4	1.273	0.905	1.6901	
15 minute summer	MH35	1.008	MH36	611.8	2.172	1.970	3.6900	
15 minute summer	MH36	1.009	PUMP AND GEO	638.0	2.888	2.085	1.4084	
15 minute summer	PUMP AND GEO	1.010	MH37	68.6	0.346	0.243	3.4039	
30 minute winter	MH37	1.011	MH38	65.8	1.657	0.281	0.2903	
30 minute winter	MH38	1.012	SW-A-07	65.8	4.739	0.055	0.1815	
30 minute winter	SW-A-07	1.013	40_OUT	124.5	0.349	0.299	3.5677	492.6

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 93.80%

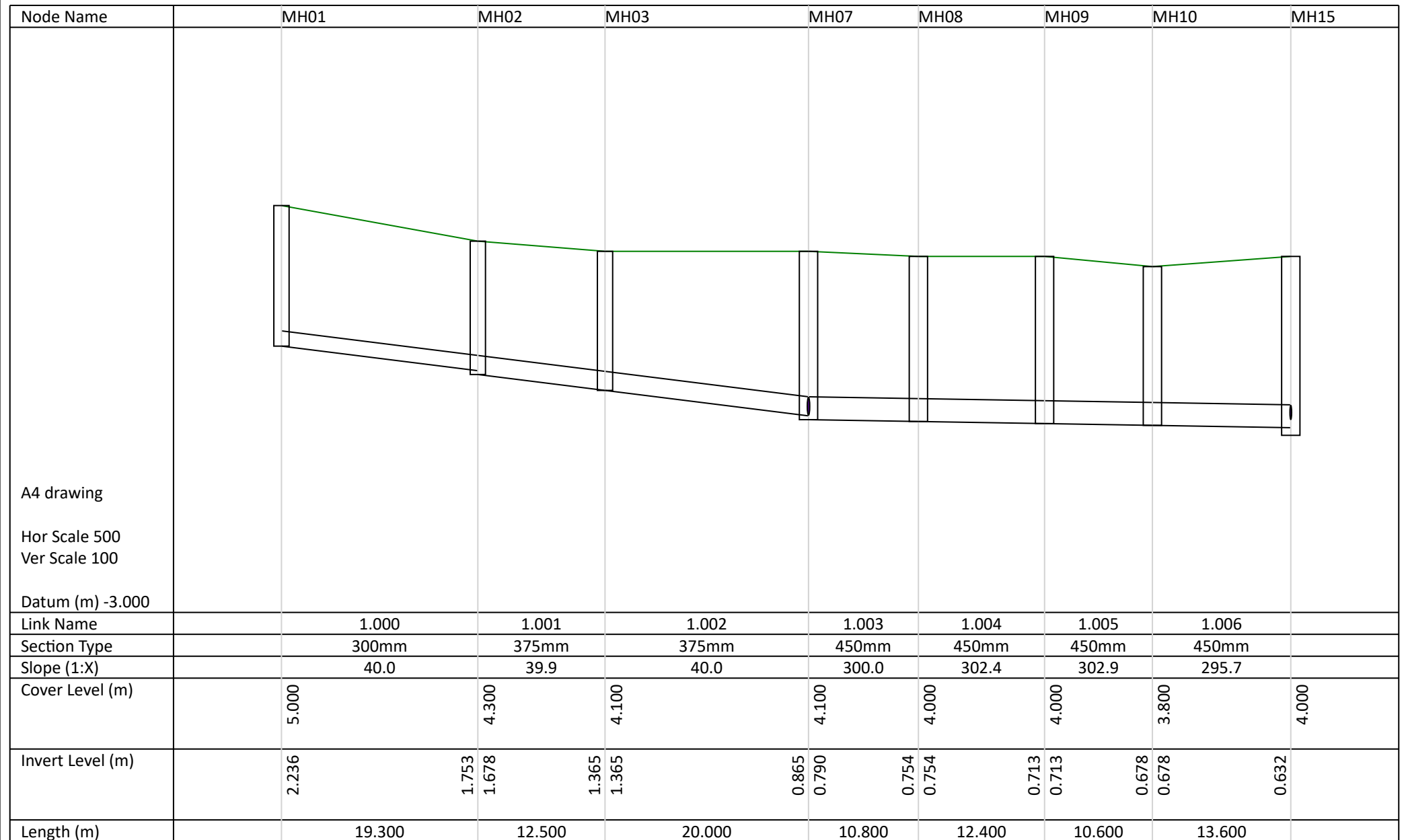
Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute winter	MH01	10	2.294	0.058	14.7	0.1027	0.0000	OK
120 minute winter	MH02	110	2.138	0.460	9.5	0.8134	0.0000	SURCHARGED
120 minute winter	MH03	110	2.138	0.773	14.3	1.3663	0.0000	SURCHARGED
15 minute winter	MH04	10	2.201	0.058	14.7	0.1025	0.0000	OK
15 minute winter	MH05	11	2.205	0.392	39.1	0.6921	0.0000	SURCHARGED
15 minute winter	MH06	11	2.190	0.745	75.2	1.3164	0.0000	SURCHARGED
120 minute winter	MH07	110	2.138	1.348	45.2	3.4310	0.0000	SURCHARGED
120 minute winter	MH08	110	2.138	1.384	50.4	3.5223	0.0000	SURCHARGED
120 minute winter	MH09	110	2.138	1.425	62.1	3.6261	0.0000	SURCHARGED
120 minute winter	MH10	112	2.138	1.460	73.8	3.7145	0.0000	SURCHARGED
15 minute winter	MH11	10	2.256	0.074	22.1	0.1303	0.0000	OK
120 minute winter	MH12	110	2.138	0.201	14.3	0.3549	0.0000	OK
120 minute winter	MH13	110	2.138	0.466	21.5	0.8231	0.0000	SURCHARGED
120 minute winter	MH14	112	2.137	0.980	28.6	1.7325	0.0000	SURCHARGED
120 minute winter	MH15	112	2.137	1.655	112.3	4.2123	0.0000	SURCHARGED
120 minute winter	MH16	112	2.138	0.459	14.2	1.1674	0.0000	SURCHARGED
120 minute winter	MH17	112	2.138	1.396	26.1	3.5520	0.0000	SURCHARGED
120 minute winter	MH18	112	2.138	1.475	34.5	3.7530	0.0000	SURCHARGED
120 minute winter	MH19	112	2.138	1.545	44.2	3.9310	0.0000	SURCHARGED
120 minute winter	MH20	112	2.138	1.574	54.0	4.0047	0.0000	SURCHARGED
120 minute winter	MH21	112	2.137	1.635	63.8	4.1623	0.0000	SURCHARGED
120 minute winter	MH22	112	2.138	0.144	4.7	0.3675	0.0000	OK
120 minute winter	MH23	110	2.138	0.182	9.5	0.4636	0.0000	OK
120 minute winter	MH24	112	2.138	0.260	14.2	0.6628	0.0000	OK
120 minute winter	MH25	112	2.138	0.277	18.9	0.7059	0.0000	OK

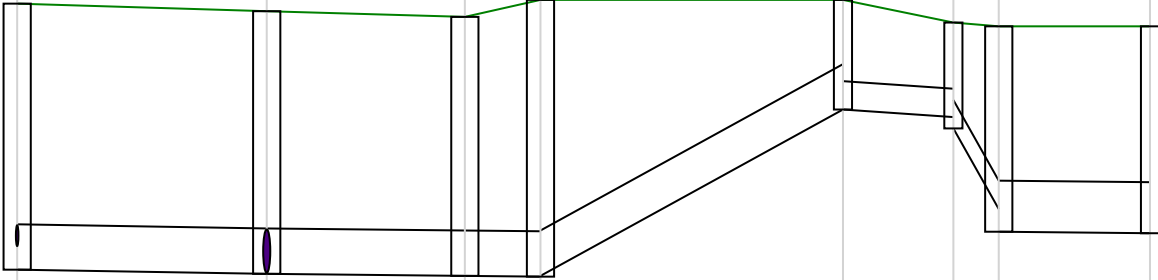
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute winter	MH01	1.000	MH02	14.7	1.451	0.083	0.7688	
15 minute summer	MH02	1.001	MH03	33.8	1.429	0.106	1.3622	
15 minute summer	MH03	1.002	MH07	48.8	1.072	0.154	2.2059	
15 minute winter	MH04	2.000	MH05	14.6	0.915	0.083	0.5258	
15 minute winter	MH05	2.001	MH06	52.1	1.886	0.295	0.8239	
15 minute summer	MH06	2.002	MH07	59.8	1.290	0.189	2.5589	
15 minute summer	MH07	1.003	MH08	114.8	0.725	0.618	1.7112	
15 minute summer	MH08	1.004	MH09	136.0	0.859	0.735	1.9647	
15 minute summer	MH09	1.005	MH10	173.9	1.098	0.941	1.6795	
15 minute summer	MH10	1.006	MH15	219.9	1.388	1.175	2.1548	
15 minute winter	MH11	3.000	MH12	22.0	1.267	0.125	0.1910	
15 minute winter	MH12	3.001	MH13	46.9	1.678	0.266	0.5122	
15 minute summer	MH13	3.002	MH14	72.1	1.802	0.409	1.4365	
15 minute summer	MH14	3.003	MH15	78.6	1.825	0.446	1.0563	
15 minute summer	MH15	1.007	MH35	313.4	1.113	0.791	4.6477	
15 minute summer	MH16	4.000	MH17	59.3	1.798	0.091	2.5685	
15 minute summer	MH17	4.001	MH18	80.4	0.640	0.203	6.6758	
15 minute summer	MH18	4.002	MH19	106.8	0.592	0.270	5.9434	
15 minute winter	MH19	4.003	MH20	134.9	0.648	0.341	2.4506	
15 minute winter	MH20	4.004	MH21	162.1	0.575	0.408	5.2110	
15 minute summer	MH21	4.005	MH34	187.4	0.665	0.473	4.6477	
15 minute summer	MH22	5.000	MH23	15.1	0.469	0.081	0.5393	
15 minute summer	MH23	5.001	MH24	28.4	0.514	0.153	1.6531	
15 minute summer	MH24	5.002	MH25	42.8	0.564	0.228	0.4366	
15 minute winter	MH25	5.003	MH28	56.8	0.651	0.307	1.7640	

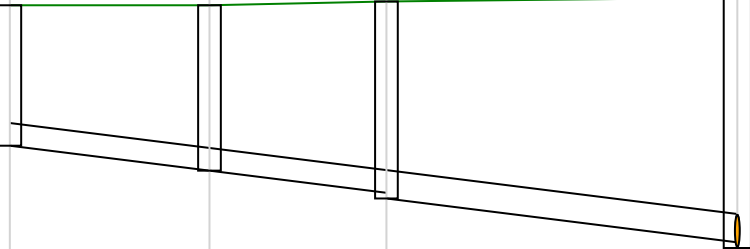
Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 93.80%

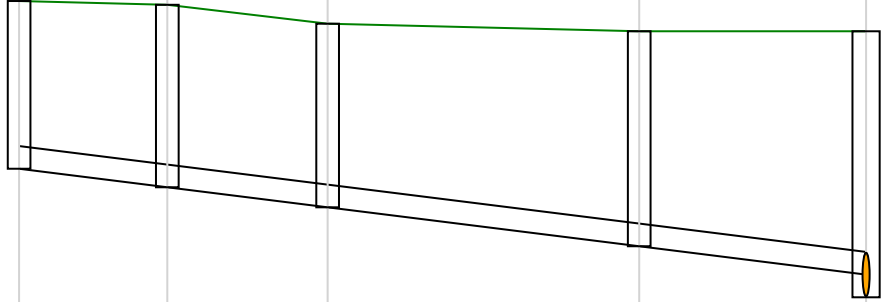
Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	MH26	10	2.235	0.058	14.7	0.1018	0.0000	OK
120 minute winter	MH27	110	2.138	0.309	11.9	0.7864	0.0000	OK
120 minute winter	MH28	112	2.138	0.333	40.1	0.8474	0.0000	OK
120 minute winter	MH29	110	2.138	1.385	49.6	3.5247	0.0000	SURCHARGED
120 minute winter	MH30	110	2.138	1.453	57.1	3.6977	0.0000	SURCHARGED
120 minute winter	MH31	110	2.138	1.545	64.7	3.9317	0.0000	SURCHARGED
120 minute winter	MH32	110	2.138	1.585	82.8	4.0332	0.0000	SURCHARGED
120 minute winter	MH33	110	2.138	1.649	100.8	4.1955	0.0000	SURCHARGED
120 minute winter	MH34	112	2.137	1.690	179.3	4.3020	0.0000	SURCHARGED
120 minute winter	MH35	112	2.137	1.710	298.2	4.3516	0.0000	SURCHARGED
120 minute winter	MH36	112	2.135	1.735	314.8	4.4153	0.0000	SURCHARGED
120 minute winter	PUMP AND GEO	112	2.133	1.743	331.5	535.7961	0.0000	SURCHARGED
30 minute summer	MH37	11	2.759	0.159	65.5	0.1795	0.0000	OK
30 minute winter	MH38	10	2.415	0.065	65.1	0.0730	0.0000	OK
30 minute summer	SW-A-07	11	1.688	0.704	65.5	1.7919	0.0000	SURCHARGED
15 minute summer	40_OUT	1	1.639	0.675	68.1	0.0000	0.0000	OK

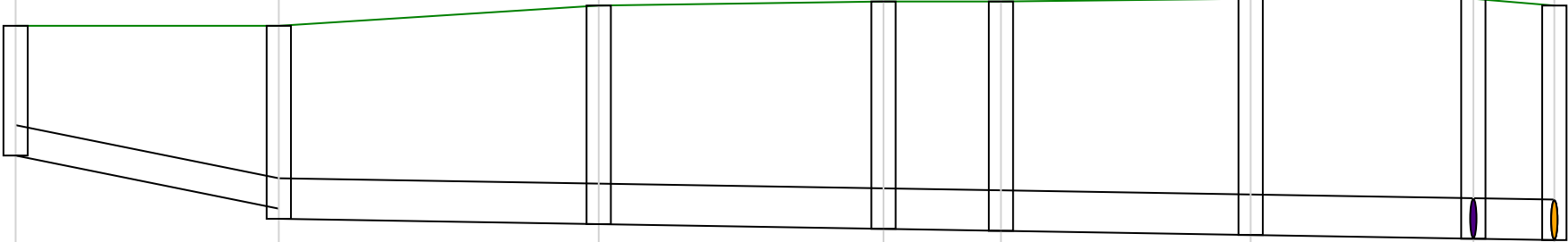
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	MH26	6.000	MH27	14.6	0.870	0.052	0.5165	
15 minute summer	MH27	6.001	MH28	37.1	0.370	0.198	0.7291	
15 minute summer	MH28	5.004	MH29	123.4	1.254	0.667	0.9827	
15 minute summer	MH29	5.005	MH30	153.3	0.793	0.387	5.7462	
15 minute summer	MH30	5.006	MH31	179.3	0.685	0.453	7.7743	
15 minute winter	MH31	5.007	MH32	193.3	0.686	0.488	3.3801	
15 minute winter	MH32	5.008	MH33	253.0	0.898	0.636	5.3519	
15 minute winter	MH33	5.009	MH34	310.7	1.103	0.785	3.5491	
15 minute summer	MH34	4.006	MH35	536.9	1.906	1.356	1.6901	
15 minute summer	MH35	1.008	MH36	868.1	3.082	2.795	3.6900	
15 minute summer	MH36	1.009	PUMP AND GEO	925.3	3.353	3.025	1.4084	
15 minute winter	PUMP AND GEO	1.010	MH37	71.3	0.361	0.252	3.4029	
30 minute summer	MH37	1.011	MH38	65.5	1.653	0.280	0.2904	
15 minute summer	MH38	1.012	SW-A-07	66.6	2.299	0.056	0.1816	
30 minute summer	SW-A-07	1.013	40_OUT	103.7	0.291	0.249	3.5684	636.2

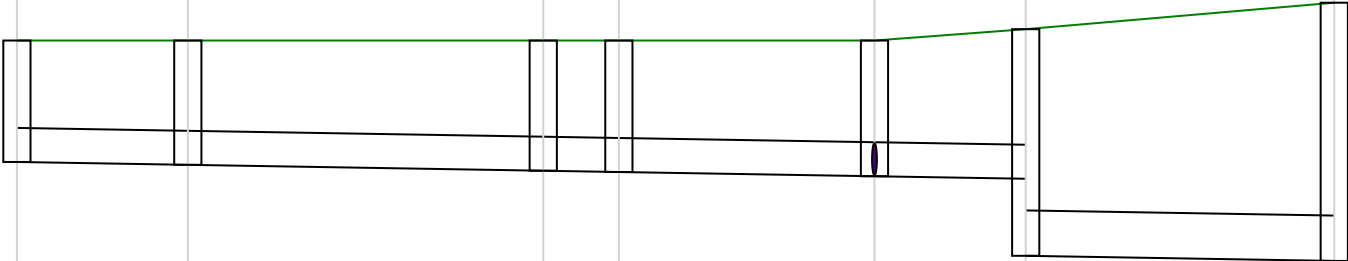



Node Name	MH15	MH35	MH36	PUMP AND GEO	MH37	MH38	SW-A-07	40_OUT
								
A4 drawing								
Hor Scale 500								
Ver Scale 100								
Datum (m) -4.000								
Link Name	1.007	1.008	1.009	1.010	1.011	1.012	1.013	
Section Type	600mm	600mm	600mm	600mm	375mm	375mm	675mm	
Slope (1:X)	300.0	485.2	500.0	-9.1	73.0	2.8	500.0	
Cover Level (m)	4.000	3.900	3.825	4.050	4.050	3.750	3.700	3.700
Invert Level (m)	0.482	0.427	0.400	0.400	2.600	2.500	0.984	0.964
Length (m)	16.500	13.100	5.000	20.000	7.300	3.000	10.000	


Node Name	MH04	MH05	MH06	MH07
				
A4 drawing				
Hor Scale 500				
Ver Scale 100				
Datum (m) -3.000				
Link Name	2.000	2.001	2.002	
Section Type	300mm	300mm	375mm	
Slope (1:X)	40.0	39.9	40.0	
Cover Level (m)	4.000	4.000	4.050	4.100
Invert Level (m)	2.143 1.813	1.813 1.813	1.520 1.445	0.865
Length (m)	13.200	11.700	23.200	

Node Name	MH11	MH12	MH13	MH14	MH15
					
A4 drawing					
Hor Scale 500					
Ver Scale 100					
Datum (m) -3.000					
Link Name	3.000	3.001	3.002	3.003	
Section Type	300mm	300mm	300mm	300mm	
Slope (1:X)	40.0	40.0	40.0	40.0	
Cover Level (m)	4.400	4.350	4.100	4.000	4.000
Invert Level (m)	2.182	1.937	1.672	1.157	0.782
Length (m)	9.800	10.600	20.600	15.000	

Node Name	MH16	MH17	MH18	MH19	MH20	MH21	MH34	MH35
								
A4 drawing								
Hor Scale 500								
Ver Scale 100								
Datum (m) -4.000								
Link Name	4.000		4.001		4.002		4.003	
Section Type	450mm		600mm		600mm		600mm	
Slope (1:X)	24.8		300.0		301.4		298.4	
Cover Level (m)	3.600	3.600	3.900	3.960	3.960	4.000	4.000	3.900
Invert Level (m)	1.679	0.892 0.742	0.663 0.663	0.593 0.593	0.564 0.564	0.502 0.502	0.447 0.447	0.427
Length (m)	19.500		23.700		21.100		8.700	
							18.500	
							16.500	
							6.000	

Node Name	MH22	MH23	MH24	MH25	MH28	MH29	MH30
							
A4 drawing							
Hor Scale 500							
Ver Scale 100							
Datum (m) -3.000							
Link Name	5.000	5.001	5.002	5.003	5.004	5.005	
Section Type	450mm	450mm	450mm	450mm	450mm	600mm	
Slope (1:X)	297.4	301.3	294.1	301.8	303.0	300.0	
Cover Level (m)	3.600	3.600	3.600	3.600	3.600	3.750	4.100
Invert Level (m)	1.994	1.956	1.878	1.861	1.805	1.772	0.685
Length (m)	11.300	23.500	5.000	16.900	10.000	20.400	

Node Name	MH30	MH31	MH32	MH33	MH34
					
A4 drawing					
Hor Scale 500					
Ver Scale 100					
Datum (m) -3.000					
Link Name	5.006		5.007		5.009
Section Type	600mm		600mm		600mm
Slope (1:X)	300.0		300.0		296.9
Cover Level (m)	4.100	4.100	4.100	4.100	4.000
Invert Level (m)	0.685	0.593 0.593	0.553 0.553	0.489 0.489	0.447
Length (m)	27.600		12.000	19.000	12.600

Node Name	MH26	MH27	MH28
			
A4 drawing			
Hor Scale 500			
Ver Scale 100			
Datum (m) -3.000			
Link Name	6.000	6.001	
Section Type	375mm	450mm	
Slope (1:X)	51.3	295.8	
Cover Level (m)	3.600	3.600	3.600
Invert Level (m)	2.177	1.904 1.829	1.805
Length (m)	14.000	7.100	

Design Settings

Rainfall Methodology	FEH-13	Minimum Velocity (m/s)	1.00
Return Period (years)	5	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	0.750	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	4.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
B.ST 01	0.017	4.00	4.100	1800	39.025	405.000	1.734
B.ST 02	0.017	4.00	4.100	1800	58.775	405.000	1.773
B.ST 03	0.032	4.00	4.400	1800	78.525	405.000	2.113
B.ST. 04	0.015	4.00	4.400	1800	114.025	405.000	2.184
B.ST. 05	0.016	4.00	4.450	1800	129.025	405.000	2.264
B.ST 06	0.033	4.00	4.450	1800	150.425	405.000	2.307
HYDRO	0.033	4.00	4.500	1500	171.825	405.000	2.400
B.ST 07			4.420	1200	176.825	405.000	2.386
B.ST 08			4.420	1200	186.325	405.000	2.648
SW-A-04			4.375	1800	191.325	405.000	3.178
10_OUT			4.375		201.325	405.000	3.203

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	B.ST 01	B.ST 02	19.750	0.600	2.366	2.327	0.039	506.4	675	4.28	50.0
1.001	B.ST 02	B.ST 03	19.750	0.600	2.327	2.287	0.040	493.8	675	4.57	50.0
1.002	B.ST 03	B.ST. 04	35.500	0.600	2.287	2.216	0.071	500.0	675	5.07	50.0
1.003	B.ST. 04	B.ST. 05	15.000	0.600	2.216	2.186	0.030	500.0	675	5.29	50.0
1.004	B.ST. 05	B.ST 06	21.400	0.600	2.186	2.143	0.043	497.7	675	5.59	50.0
1.005	B.ST 06	HYDRO	21.400	0.600	2.143	2.100	0.043	497.7	675	5.90	50.0
1.006	HYDRO	B.ST 07	5.000	0.600	2.100	2.034	0.066	75.8	150	5.95	50.0
1.007	B.ST 07	B.ST 08	9.500	0.600	2.034	1.772	0.262	36.3	150	6.03	50.0
1.008	B.ST 08	SW-A-04	5.000	0.600	1.772	1.722	0.050	100.0	150	6.09	50.0
1.009	SW-A-04	10_OUT	10.000	0.600	1.197	1.172	0.025	400.0	675	6.22	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.000	1.158	414.2	2.3	1.059	1.098	0.017	0.0
1.001	1.172	419.5	4.6	1.098	1.438	0.034	0.0
1.002	1.165	416.9	8.9	1.438	1.509	0.066	0.0
1.003	1.165	416.9	11.0	1.509	1.589	0.081	0.0
1.004	1.168	417.9	13.1	1.589	1.632	0.097	0.0
1.005	1.168	417.9	17.6	1.632	1.725	0.130	0.0
1.006	1.156	20.4	22.1	2.250	2.236	0.163	0.0
1.007	1.677	29.6	22.1	2.236	2.498	0.163	0.0
1.008	1.005	17.8	22.1	2.498	2.503	0.163	0.0
1.009	1.304	466.6	22.1	2.503	2.528	0.163	0.0

Pipeline Schedule










Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	19.750	506.4	675	1 STANDARD	4.100	2.366	1.059	4.100	2.327	1.098
1.001	19.750	493.8	675	1 STANDARD	4.100	2.327	1.098	4.400	2.287	1.438
1.002	35.500	500.0	675	1 STANDARD	4.400	2.287	1.438	4.400	2.216	1.509
1.003	15.000	500.0	675	1 STANDARD	4.400	2.216	1.509	4.450	2.186	1.589
1.004	21.400	497.7	675	1 STANDARD	4.450	2.186	1.589	4.450	2.143	1.632
1.005	21.400	497.7	675	1 STANDARD	4.450	2.143	1.632	4.500	2.100	1.725
1.006	5.000	75.8	150	1 STANDARD	4.500	2.100	2.250	4.420	2.034	2.236
1.007	9.500	36.3	150	1 STANDARD	4.420	2.034	2.236	4.420	1.772	2.498
1.008	5.000	100.0	150	1 STANDARD	4.420	1.772	2.498	4.375	1.722	2.503
1.009	10.000	400.0	675	1 STANDARD	4.375	1.197	2.503	4.375	1.172	2.528

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	B.ST 01	1800	Manhole	1 STANDARD	B.ST 02	1800	Manhole	1 STANDARD
1.001	B.ST 02	1800	Manhole	1 STANDARD	B.ST 03	1800	Manhole	1 STANDARD
1.002	B.ST 03	1800	Manhole	1 STANDARD	B.ST. 04	1800	Manhole	1 STANDARD
1.003	B.ST. 04	1800	Manhole	1 STANDARD	B.ST. 05	1800	Manhole	1 STANDARD
1.004	B.ST. 05	1800	Manhole	1 STANDARD	B.ST 06	1800	Manhole	1 STANDARD
1.005	B.ST 06	1800	Manhole	1 STANDARD	HYDRO	1500	Manhole	1 STANDARD
1.006	HYDRO	1500	Manhole	1 STANDARD	B.ST 07	1200	Manhole	1 STANDARD
1.007	B.ST 07	1200	Manhole	1 STANDARD	B.ST 08	1200	Manhole	1 STANDARD
1.008	B.ST 08	1200	Manhole	1 STANDARD	SW-A-04	1800	Manhole	1 STANDARD
1.009	SW-A-04	1800	Manhole	1 STANDARD	10_OUT		Manhole	1 STANDARD

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
B.ST 01	39.025	405.000	4.100	1.734	1800				
						0	1.000	2.366	675
B.ST 02	58.775	405.000	4.100	1.773	1800				
						0	1.001	2.327	675
B.ST 03	78.525	405.000	4.400	2.113	1800				
						0	1.002	2.287	675
B.ST. 04	114.025	405.000	4.400	2.184	1800				
						0	1.003	2.216	675
B.ST. 05	129.025	405.000	4.450	2.264	1800				
						0	1.004	2.186	675
B.ST 06	150.425	405.000	4.450	2.307	1800				
						0	1.005	2.143	675

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
HYDRO	171.825	405.000	4.500	2.400	1500	1 — 	1.005	2.100	675
B.ST 07	176.825	405.000	4.420	2.386	1200	0 —  1 — 	1.006	2.100	150
B.ST 08	186.325	405.000	4.420	2.648	1200	0 —  1 — 	1.007	2.034	150
SW-A-04	191.325	405.000	4.375	3.178	1800	0 —  1 — 	1.008	1.772	150
10_OUT	201.325	405.000	4.375	3.203		0 —  1 — 	1.009	1.197	675

Simulation Settings

Rainfall Methodology	FEH-13	Analysis Speed	Detailed	Additional Storage (m ³ /ha)	0.0
Summer CV	0.750	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	0.840	Drain Down Time (mins)	1440	Check Discharge Volume	x

Storm Durations

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

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
30	40	0	0
100	0	0	0
100	45	0	0

Node HYDRO Online Hydro-Brake[®] Control

Flap Valve	x	Objective (HE)	Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	2.100	Product Number	CTL-SHE-0134-1000-1800-1000
Design Depth (m)	1.800	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	10.0	Min Node Diameter (mm)	1500

Results for 2 year Critical Storm Duration. Lowest mass balance: 94.26%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute winter	B.ST 01	10	2.404	0.038	2.7	0.0967	0.0000	OK
15 minute winter	B.ST 02	11	2.378	0.051	5.3	0.1298	0.0000	OK
15 minute winter	B.ST 03	11	2.356	0.069	10.0	0.1763	0.0000	OK
30 minute winter	B.ST. 04	23	2.338	0.122	8.9	0.3102	0.0000	OK
30 minute winter	B.ST. 05	23	2.339	0.153	8.1	0.3882	0.0000	OK
30 minute winter	B.ST 06	23	2.339	0.196	9.1	0.4982	0.0000	OK
30 minute winter	HYDRO	23	2.338	0.238	9.3	0.4213	0.0000	SURCHARGED
15 minute winter	B.ST 07	14	2.088	0.054	8.1	0.0609	0.0000	OK
30 minute winter	B.ST 08	23	1.861	0.089	8.1	0.1009	0.0000	OK
15 minute winter	SW-A-04	17	1.853	0.656	8.1	1.6693	0.0000	OK
15 minute summer	10_OUT	1	1.847	0.675	12.1	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute winter	B.ST 01	1.000	B.ST 02	2.6	0.268	0.006	0.1973	
15 minute winter	B.ST 02	1.001	B.ST 03	5.0	0.325	0.012	0.3094	
15 minute winter	B.ST 03	1.002	B.ST. 04	9.6	0.460	0.023	0.9975	
15 minute winter	B.ST. 04	1.003	B.ST. 05	9.3	0.418	0.022	0.7677	
15 minute summer	B.ST. 05	1.004	B.ST 06	7.9	0.246	0.019	1.3427	
15 minute winter	B.ST 06	1.005	HYDRO	7.4	0.141	0.018	2.0957	
30 minute winter	HYDRO	1.006	B.ST 07	8.1	1.155	0.398	0.0353	
30 minute winter	B.ST 07	1.007	B.ST 08	8.1	1.079	0.275	0.0788	
30 minute winter	B.ST 08	1.008	SW-A-04	8.3	0.911	0.469	0.0680	
30 minute winter	SW-A-04	1.009	10_OUT	14.0	0.039	0.030	3.5539	10.3

Results for 30 year Critical Storm Duration. Lowest mass balance: 94.26%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
30 minute winter	B.ST 01	29	2.546	0.180	7.5	0.4583	0.0000	OK
30 minute winter	B.ST 02	26	2.542	0.215	10.1	0.5471	0.0000	OK
30 minute winter	B.ST 03	26	2.543	0.256	18.0	0.6514	0.0000	OK
30 minute winter	B.ST. 04	28	2.543	0.327	17.8	0.8318	0.0000	OK
30 minute winter	B.ST. 05	28	2.542	0.356	13.3	0.9064	0.0000	OK
30 minute winter	B.ST 06	27	2.541	0.398	14.7	1.0133	0.0000	OK
30 minute winter	HYDRO	27	2.541	0.441	13.0	0.7784	0.0000	SURCHARGED
30 minute winter	B.ST 07	28	2.093	0.059	9.7	0.0671	0.0000	OK
30 minute winter	B.ST 08	25	1.871	0.099	9.8	0.1125	0.0000	OK
15 minute summer	SW-A-04	14	1.854	0.657	9.8	1.6724	0.0000	OK
15 minute summer	10_OUT	1	1.847	0.675	14.7	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute summer	B.ST 01	1.000	B.ST 02	6.9	0.344	0.017	1.1396	
15 minute summer	B.ST 02	1.001	B.ST 03	13.3	0.411	0.032	1.5193	
15 minute winter	B.ST 03	1.002	B.ST. 04	21.9	0.520	0.053	4.5231	
15 minute winter	B.ST. 04	1.003	B.ST. 05	19.3	0.423	0.046	2.4438	
15 minute summer	B.ST. 05	1.004	B.ST 06	16.9	0.247	0.040	3.6278	
15 minute winter	B.ST 06	1.005	HYDRO	11.9	0.158	0.029	4.5902	
30 minute winter	HYDRO	1.006	B.ST 07	9.7	1.207	0.477	0.0404	
30 minute winter	B.ST 07	1.007	B.ST 08	9.8	1.104	0.329	0.0897	
15 minute winter	B.ST 08	1.008	SW-A-04	9.9	0.957	0.556	0.0714	
15 minute winter	SW-A-04	1.009	10_OUT	17.0	0.048	0.036	3.5544	25.6

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 94.26%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
60 minute winter	B.ST 01	48	2.682	0.316	4.7	0.8049	0.0000	OK
60 minute winter	B.ST 02	48	2.682	0.355	7.9	0.9045	0.0000	OK
60 minute winter	B.ST 03	50	2.681	0.394	11.7	1.0038	0.0000	OK
60 minute winter	B.ST. 04	51	2.681	0.465	10.7	1.1832	0.0000	OK
60 minute winter	B.ST. 05	49	2.682	0.496	8.9	1.2612	0.0000	OK
60 minute winter	B.ST 06	49	2.682	0.539	11.2	1.3725	0.0000	OK
60 minute winter	HYDRO	49	2.683	0.583	13.2	1.0296	0.0000	SURCHARGED
60 minute winter	B.ST 07	49	2.094	0.060	10.0	0.0682	0.0000	OK
30 minute winter	B.ST 08	25	1.873	0.101	10.0	0.1142	0.0000	OK
30 minute summer	SW-A-04	19	1.853	0.656	10.1	1.6691	0.0000	OK
15 minute summer	10_OUT	1	1.847	0.675	17.1	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute winter	B.ST 01	1.000	B.ST 02	12.4	0.354	0.030	2.7439	
15 minute winter	B.ST 02	1.001	B.ST 03	-18.9	0.405	-0.045	3.2194	
15 minute summer	B.ST 03	1.002	B.ST. 04	26.3	0.523	0.063	6.0910	
15 minute summer	B.ST. 04	1.003	B.ST. 05	27.9	0.414	0.067	3.1301	
15 minute summer	B.ST. 05	1.004	B.ST 06	22.6	0.240	0.054	4.9595	
15 minute summer	B.ST 06	1.005	HYDRO	16.6	0.147	0.040	5.5138	
60 minute winter	HYDRO	1.006	B.ST 07	10.0	1.213	0.489	0.0412	
60 minute winter	B.ST 07	1.007	B.ST 08	10.0	1.043	0.337	0.0912	
30 minute winter	B.ST 08	1.008	SW-A-04	10.1	0.947	0.572	0.0718	
15 minute summer	SW-A-04	1.009	10_OUT	17.1	0.048	0.037	3.5537	33.9

Results for 100 year Critical Storm Duration. Lowest mass balance: 94.26%

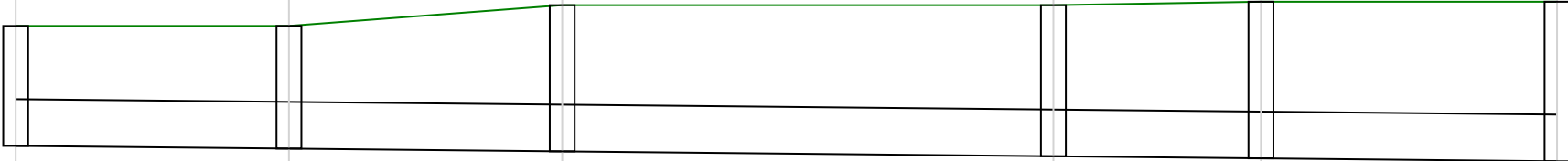
Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
60 minute winter	B.ST 01	49	2.653	0.287	4.5	0.7292	0.0000	OK
60 minute winter	B.ST 02	49	2.652	0.325	7.3	0.8275	0.0000	OK
60 minute winter	B.ST 03	48	2.651	0.364	12.4	0.9275	0.0000	OK
60 minute winter	B.ST. 04	47	2.653	0.437	11.1	1.1110	0.0000	OK
60 minute winter	B.ST. 05	47	2.652	0.466	9.3	1.1855	0.0000	OK
60 minute winter	B.ST 06	48	2.651	0.508	11.0	1.2931	0.0000	OK
60 minute winter	HYDRO	49	2.651	0.551	13.2	0.9744	0.0000	SURCHARGED
60 minute winter	B.ST 07	48	2.094	0.060	10.0	0.0681	0.0000	OK
30 minute winter	B.ST 08	26	1.873	0.101	10.0	0.1140	0.0000	OK
15 minute summer	SW-A-04	13	1.855	0.658	10.1	1.6735	0.0000	OK
15 minute summer	10_OUT	1	1.847	0.675	15.1	0.0000	0.0000	OK

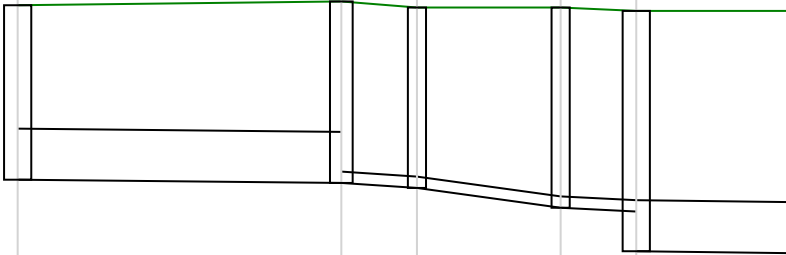
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute winter	B.ST 01	1.000	B.ST 02	8.9	0.351	0.021	2.3944	
15 minute winter	B.ST 02	1.001	B.ST 03	-16.8	0.413	-0.040	2.8930	
15 minute summer	B.ST 03	1.002	B.ST. 04	26.3	0.525	0.063	5.5792	
15 minute summer	B.ST. 04	1.003	B.ST. 05	25.5	0.414	0.061	2.8384	
15 minute winter	B.ST. 05	1.004	B.ST 06	18.5	0.247	0.044	5.1396	
15 minute winter	B.ST 06	1.005	HYDRO	14.9	0.148	0.036	5.7760	
60 minute winter	HYDRO	1.006	B.ST 07	10.0	1.212	0.488	0.0412	
60 minute winter	B.ST 07	1.007	B.ST 08	10.0	1.038	0.337	0.0911	
30 minute winter	B.ST 08	1.008	SW-A-04	10.1	0.944	0.570	0.0717	
30 minute summer	SW-A-04	1.009	10_OUT	16.5	0.046	0.035	3.5536	41.8


Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 94.26%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute winter	B.ST 01	58	3.142	0.776	7.1	1.9759	0.0000	SURCHARGED
60 minute winter	B.ST 02	59	3.140	0.813	10.2	2.0693	0.0000	SURCHARGED
60 minute winter	B.ST 03	59	3.140	0.853	13.9	2.1698	0.0000	SURCHARGED
60 minute winter	B.ST. 04	59	3.139	0.923	11.0	2.3497	0.0000	SURCHARGED
60 minute winter	B.ST. 05	59	3.138	0.952	12.5	2.4229	0.0000	SURCHARGED
60 minute winter	B.ST 06	58	3.141	0.998	12.6	2.5402	0.0000	SURCHARGED
60 minute winter	HYDRO	58	3.144	1.044	15.0	1.8451	0.0000	SURCHARGED
15 minute summer	B.ST 07	12	2.095	0.061	10.0	0.0687	0.0000	OK
15 minute summer	B.ST 08	13	1.873	0.101	10.0	0.1145	0.0000	OK
30 minute summer	SW-A-04	17	1.853	0.656	10.2	1.6698	0.0000	OK
15 minute summer	10_OUT	1	1.847	0.675	17.2	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	B.ST 01	1.000	B.ST 02	-21.5	0.355	-0.052	4.5415	
15 minute summer	B.ST 02	1.001	B.ST 03	-27.2	0.417	-0.065	4.2567	
15 minute winter	B.ST 03	1.002	B.ST. 04	28.8	0.528	0.069	10.2291	
15 minute winter	B.ST. 04	1.003	B.ST. 05	30.6	0.418	0.073	4.7560	
15 minute summer	B.ST. 05	1.004	B.ST 06	30.3	0.244	0.073	6.4806	
15 minute winter	B.ST 06	1.005	HYDRO	19.5	0.170	0.047	7.4883	
15 minute summer	HYDRO	1.006	B.ST 07	10.0	1.213	0.490	0.0414	
15 minute winter	B.ST 07	1.007	B.ST 08	10.0	1.125	0.339	0.0914	
30 minute summer	B.ST 08	1.008	SW-A-04	10.2	0.937	0.574	0.0718	
15 minute winter	SW-A-04	1.009	10_OUT	17.5	0.049	0.038	3.5539	52.5

Node Name	B.ST 01	B.ST 02	B.ST 03	B.ST 04	B.ST 05	B.ST 06
						
A4 drawing						
Hor Scale 500						
Ver Scale 100						
Datum (m) -2.000						
Link Name	1.000		1.001		1.002	
Section Type	675mm		675mm		675mm	
Slope (1:X)	506.4		493.8		500.0	
Cover Level (m)	4.100	4.100	4.400	4.400	4.450	4.450
Invert Level (m)	2.366	2.327 2.327	2.287 2.287	2.216 2.216	2.186 2.186	2.143
Length (m)	19.750		19.750		15.000	
					21.400	

Node Name	B.ST 06	HYDROB.ST 07	B.ST 0&SW-A-04	10_OUT							
<p>A4 drawing</p> <p>Hor Scale 500</p> <p>Ver Scale 100</p> <p>Datum (m) -3.000</p>											
	Link Name	1.005	1.006	1.007	1.008	1.009					
	Section Type	675mm	150mm	150mm	150mm	675mm					
	Slope (1:X)	497.7	75.8	36.3	100.0	400.0					
	Cover Level (m)	4.450	4.500	4.420	4.420	4.375	4.375				
	Invert Level (m)	2.143	2.100	2.100	2.034	2.034	1.772	1.772	1.722	1.197	1.172
	Length (m)	21.400	5.000	9.500	5.000	10.000					


EAS Transport Planning		Page 1
Unit 23, The Maltings Stanstead Abbotts Hertfordshire, SG12 8HG	BLOCK E GEOCELLULAR STORAGE OUTLINE	
Date 22/09/2022 09:32 File 20220922-Block E - Geoc...	Designed by EAS Checked by	
Innovyze	Source Control 2020.1.3	

Summary of Results for 100 year Return Period (+45%)

Half Drain Time : 83 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max E (l/s)	Max Outflow (l/s)	Max Volume (m ³)	Status
15 min Summer	2.904	1.504	0.0	30.0		30.0	210.2	O K
30 min Summer	3.055	1.655	0.0	30.0		30.0	231.4	O K
60 min Summer	3.107	1.707	0.0	30.0		30.0	238.7	O K
120 min Summer	2.937	1.537	0.0	30.0		30.0	215.0	O K
180 min Summer	2.763	1.363	0.0	30.0		30.0	190.6	O K
240 min Summer	2.616	1.216	0.0	30.0		30.0	170.1	O K
360 min Summer	2.363	0.963	0.0	30.0		30.0	134.6	O K
480 min Summer	2.145	0.745	0.0	30.0		30.0	104.2	O K
600 min Summer	1.961	0.561	0.0	30.0		30.0	78.5	O K
720 min Summer	1.809	0.409	0.0	30.0		30.0	57.2	O K
960 min Summer	1.625	0.225	0.0	30.0		30.0	31.4	O K
1440 min Summer	1.494	0.094	0.0	28.1		28.1	13.1	O K
15 min Winter	3.135	1.735	0.0	30.0		30.0	242.7	O K
30 min Winter	3.309	1.909	0.0	30.0		30.0	266.9	O K
60 min Winter	3.697	2.297	0.0	30.0		30.0	277.2	O K
120 min Winter	3.216	1.816	0.0	30.0		30.0	254.0	O K
180 min Winter	2.979	1.579	0.0	30.0		30.0	220.8	O K
240 min Winter	2.768	1.368	0.0	30.0		30.0	191.4	O K
360 min Winter	2.387	0.987	0.0	30.0		30.0	138.0	O K
480 min Winter	2.060	0.660	0.0	30.0		30.0	92.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
15 min Summer	233.627	0.0	280.4	45
30 min Summer	130.931	0.0	314.2	55
60 min Summer	73.377	0.0	352.2	76
120 min Summer	41.122	0.0	394.8	112
180 min Summer	29.307	0.0	422.0	146
240 min Summer	23.046	0.0	442.5	178
360 min Summer	16.424	0.0	473.0	242
480 min Summer	12.916	0.0	495.9	304
600 min Summer	10.719	0.0	514.5	364
720 min Summer	9.205	0.0	530.1	422
960 min Summer	7.439	0.0	571.2	532
1440 min Summer	5.510	0.0	634.7	748
15 min Winter	233.627	0.0	314.0	46
30 min Winter	130.931	0.0	351.9	56
60 min Winter	73.377	0.0	394.5	78
120 min Winter	41.122	0.0	442.2	120
180 min Winter	29.307	0.0	472.7	156
240 min Winter	23.046	0.0	495.6	190
360 min Winter	16.424	0.0	529.7	258
480 min Winter	12.916	0.0	555.5	322


Unit 23, The Maltings Stanstead Abbotts Hertfordshire, SG12 8HG	BLOCK E GEOCELLULAR STORAGE OUTLINE	
Date 22/09/2022 09:32 File 20220922-Block E - Geoc...	Designed by EAS Checked by	

Innovyze Source Control 2020.1.3

Summary of Results for 100 year Return Period (+45%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m ³)	Status
600 min Winter	1.796	0.396	0.0	30.0	30.0	55.4	O K
720 min Winter	1.603	0.203	0.0	30.0	30.0	28.4	O K
960 min Winter	1.493	0.093	0.0	27.8	27.8	13.0	O K
1440 min Winter	1.469	0.069	0.0	20.8	20.8	9.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
600 min Winter	10.719	0.0	576.3	376
720 min Winter	9.205	0.0	593.7	424
960 min Winter	7.439	0.0	639.8	508
1440 min Winter	5.510	0.0	710.8	742

Unit 23, The Maltings Stanstead Abbotts Hertfordshire, SG12 8HG	BLOCK E GEOCELLULAR STORAGE OUTLINE	
---	---	---

Date 22/09/2022 09:32 File 20220922-Block E - Geoc...	Designed by EAS Checked by	
--	-------------------------------	--

Innovyze	Source Control 2020.1.3
----------	-------------------------


Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	1999
Site Location	GB 622800 309650 TG 22800 09650
C (1km)	-0.024
D1 (1km)	0.275
D2 (1km)	0.370
D3 (1km)	0.255
E (1km)	0.310
F (1km)	2.498
Summer Storms	Yes
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Shortest Storm (mins)	15
Longest Storm (mins)	1440
Climate Change %	+45

Time Area Diagram

Total Area (ha) 0.640

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From:	To:	From:	To:	From:	To:
	(ha)		(ha)		(ha)
0	4 0.040	12	16 0.080	24	28 0.080
4	8 0.040	16	20 0.080	28	32 0.080
8	12 0.080	20	24 0.080	32	36 0.080

Unit 23, The Maltings Stanstead Abbotts Hertfordshire, SG12 8HG	BLOCK E GEOCELLULAR STORAGE OUTLINE	
---	---	---

Date 22/09/2022 09:32 File 20220922-Block E - Geoc...	Designed by EAS Checked by	
--	-------------------------------	--

Innovyze	Source Control 2020.1.3
----------	-------------------------

Model Details

Storage is Online Cover Level (m) 4.400

Cellular Storage Structure

Invert Level (m) 1.400 Safety Factor 2.0
 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
 Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	147.2	0.0	1.980	147.2	0.0
0.660	147.2	0.0	1.981	0.0	0.0
1.320	147.2	0.0			

Pump Outflow Control

Invert Level (m) 1.400

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	30.0000	0.900	30.0000	1.700	30.0000	2.500	30.0000
0.200	30.0000	1.000	30.0000	1.800	30.0000	2.600	30.0000
0.300	30.0000	1.100	30.0000	1.900	30.0000	2.700	30.0000
0.400	30.0000	1.200	30.0000	2.000	30.0000	2.800	30.0000
0.500	30.0000	1.300	30.0000	2.100	30.0000	2.900	30.0000
0.600	30.0000	1.400	30.0000	2.200	30.0000	3.000	30.0000
0.700	30.0000	1.500	30.0000	2.300	30.0000		
0.800	30.0000	1.600	30.0000	2.400	30.0000		

Unit 23, The Maltings
 Stanstead Abbotts
 Hertfordshire, SG12 8HG

BLOCK F
 GEOCELLULAR STORAGE
 OUTLINE



Date 14/07/2022 00:04
 File 20220713-Block F - Geoc...

Designed by EAS
 Checked by

Innovyze Source Control 2020.1.3

Summary of Results for 100 year Return Period (+45%)

Half Drain Time : 91 minutes.


Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	1.542	1.042	0.0	20.0	20.0	111.5	O K
30 min Summer	1.847	1.347	0.0	20.0	20.0	144.1	O K
60 min Summer	2.077	1.577	0.0	20.0	20.0	168.7	O K
120 min Summer	2.199	1.699	0.0	20.0	20.0	181.7	O K
180 min Summer	2.230	1.730	0.0	20.0	20.0	185.1	O K
240 min Summer	2.221	1.721	0.0	20.0	20.0	184.1	O K
360 min Summer	2.138	1.638	0.0	20.0	20.0	175.2	O K
480 min Summer	2.011	1.511	0.0	20.0	20.0	161.6	O K
600 min Summer	1.872	1.372	0.0	20.0	20.0	146.8	O K
720 min Summer	1.737	1.237	0.0	20.0	20.0	132.3	O K
960 min Summer	1.501	1.001	0.0	20.0	20.0	107.0	O K
1440 min Summer	1.238	0.738	0.0	18.4	18.4	78.9	O K
2160 min Summer	1.062	0.562	0.0	14.0	14.0	60.1	O K
2880 min Summer	0.956	0.456	0.0	11.4	11.4	48.8	O K
4320 min Summer	0.835	0.335	0.0	8.4	8.4	35.8	O K
5760 min Summer	0.768	0.268	0.0	6.7	6.7	28.7	O K
7200 min Summer	0.726	0.226	0.0	5.7	5.7	24.2	O K
8640 min Summer	0.697	0.197	0.0	4.9	4.9	21.1	O K
10080 min Summer	0.676	0.176	0.0	4.4	4.4	18.8	O K
15 min Winter	1.680	1.180	0.0	20.0	20.0	126.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	161.698	0.0	135.5	33
30 min Summer	106.079	0.0	177.8	44
60 min Summer	66.043	0.0	221.4	66
120 min Summer	40.674	0.0	272.7	104
180 min Summer	30.745	0.0	309.2	138
240 min Summer	25.190	0.0	337.8	172
360 min Summer	18.924	0.0	380.7	240
480 min Summer	15.309	0.0	410.6	306
600 min Summer	12.911	0.0	432.8	370
720 min Summer	11.192	0.0	450.3	432
960 min Summer	8.868	0.0	475.6	548
1440 min Summer	6.306	0.0	507.4	776
2160 min Summer	4.438	0.0	535.5	1136
2880 min Summer	3.453	0.0	555.6	1500
4320 min Summer	2.428	0.0	586.0	2220
5760 min Summer	1.899	0.0	611.1	2944
7200 min Summer	1.581	0.0	636.0	3680
8640 min Summer	1.367	0.0	660.0	4408
10080 min Summer	1.213	0.0	683.4	5144
15 min Winter	161.698	0.0	151.7	34

Summary of Results for 100 year Return Period (+45%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m ³)	Status
30 min Winter	2.031	1.531	0.0	20.0	20.0	163.8	O K
60 min Winter	2.302	1.802	0.0	20.0	20.0	192.8	O K
120 min Winter	2.442	1.942	0.0	20.0	20.0	207.7	O K
180 min Winter	2.454	1.954	0.0	20.0	20.0	209.1	O K
240 min Winter	2.418	1.918	0.0	20.0	20.0	205.2	O K
360 min Winter	2.262	1.762	0.0	20.0	20.0	188.5	O K
480 min Winter	2.053	1.553	0.0	20.0	20.0	166.1	O K
600 min Winter	1.836	1.336	0.0	20.0	20.0	142.9	O K
720 min Winter	1.635	1.135	0.0	20.0	20.0	121.5	O K
960 min Winter	1.332	0.832	0.0	20.0	20.0	89.0	O K
1440 min Winter	1.119	0.619	0.0	15.5	15.5	66.2	O K
2160 min Winter	0.950	0.450	0.0	11.3	11.3	48.1	O K
2880 min Winter	0.855	0.355	0.0	8.9	8.9	38.0	O K
4320 min Winter	0.753	0.253	0.0	6.3	6.3	27.1	O K
5760 min Winter	0.699	0.199	0.0	5.0	5.0	21.3	O K
7200 min Winter	0.666	0.166	0.0	4.2	4.2	17.8	O K
8640 min Winter	0.644	0.144	0.0	3.6	3.6	15.4	O K
10080 min Winter	0.628	0.128	0.0	3.2	3.2	13.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
30 min Winter	106.079	0.0	199.2	45
60 min Winter	66.043	0.0	248.0	68
120 min Winter	40.674	0.0	305.4	114
180 min Winter	30.745	0.0	346.3	148
240 min Winter	25.190	0.0	378.3	186
360 min Winter	18.924	0.0	426.3	260
480 min Winter	15.309	0.0	459.9	328
600 min Winter	12.911	0.0	484.8	392
720 min Winter	11.192	0.0	504.2	452
960 min Winter	8.868	0.0	532.7	554
1440 min Winter	6.306	0.0	568.3	790
2160 min Winter	4.438	0.0	599.8	1152
2880 min Winter	3.453	0.0	622.3	1512
4320 min Winter	2.428	0.0	656.3	2228
5760 min Winter	1.899	0.0	684.4	2952
7200 min Winter	1.581	0.0	712.3	3680
8640 min Winter	1.367	0.0	739.2	4416
10080 min Winter	1.213	0.0	765.4	5144

Unit 23, The Maltings Stanstead Abbotts Hertfordshire, SG12 8HG	BLOCK F GEOCELLULAR STORAGE OUTLINE	
Date 14/07/2022 00:04 File 20220713-Block F - Geoc...	Designed by EAS Checked by	

Innovyze	Source Control 2020.1.3
----------	-------------------------


Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	2013
Site Location	GB 623065 309383 TG 23065 09383
Data Type	Point
Summer Storms	Yes
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Shortest Storm (mins)	15
Longest Storm (mins)	10080
Climate Change %	+45

Time Area Diagram

Total Area (ha) 0.447

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
From:	To:	From:	To:	From:	To:
0	4 0.075	8	12 0.075	16	20 0.074
4	8 0.075	12	16 0.074	20	24 0.074

Unit 23, The Maltings Stanstead Abbotts Hertfordshire, SG12 8HG	BLOCK F GEOCELLULAR STORAGE OUTLINE	
---	---	---

Date 14/07/2022 00:04 File 20220713-Block F - Geoc...	Designed by EAS Checked by	
--	-------------------------------	--

Innovyze	Source Control 2020.1.3
----------	-------------------------

Model Details

Storage is Online Cover Level (m) 4.050

Cellular Storage Structure

Invert Level (m) 0.500 Safety Factor 2.0
 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
 Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	112.6	0.0	1.980	112.6	0.0
0.660	112.6	0.0	1.981	0.0	0.0
1.320	112.6	0.0			

Pump Outflow Control

Invert Level (m) 0.500


Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.200	5.0000	1.800	20.0000	3.400	20.0000	5.000	20.0000
0.400	10.0000	2.000	20.0000	3.600	20.0000	5.200	20.0000
0.600	15.0000	2.200	20.0000	3.800	20.0000	5.400	20.0000
0.800	20.0000	2.400	20.0000	4.000	20.0000	5.600	20.0000
1.000	20.0000	2.600	20.0000	4.200	20.0000	5.800	20.0000
1.200	20.0000	2.800	20.0000	4.400	20.0000	6.000	20.0000
1.400	20.0000	3.000	20.0000	4.600	20.0000		
1.600	20.0000	3.200	20.0000	4.800	20.0000		

Summary of Results for 100 year Return Period (+45%)

Half Drain Time : 53 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	1.112	1.112	0.0	70.0	70.0	206.9	O K
30 min Summer	1.404	1.404	0.0	70.0	70.0	261.2	O K
60 min Summer	1.654	1.654	0.0	70.0	70.0	307.7	O K
120 min Summer	1.770	1.770	0.0	70.0	70.0	329.2	O K
180 min Summer	1.775	1.775	0.0	70.0	70.0	330.3	O K
240 min Summer	1.734	1.734	0.0	70.0	70.0	322.5	O K
360 min Summer	1.579	1.579	0.0	70.0	70.0	293.6	O K
480 min Summer	1.390	1.390	0.0	70.0	70.0	258.5	O K
600 min Summer	1.218	1.218	0.0	70.0	70.0	226.5	O K
720 min Summer	1.085	1.085	0.0	70.0	70.0	201.8	O K
960 min Summer	0.978	0.978	0.0	64.4	64.4	181.9	O K
1440 min Summer	0.910	0.910	0.0	47.6	47.6	169.3	O K
2160 min Summer	0.856	0.856	0.0	33.9	33.9	159.2	O K
2880 min Summer	0.821	0.821	0.0	25.3	25.3	152.7	O K
4320 min Summer	0.633	0.633	0.0	16.7	16.7	117.7	O K
5760 min Summer	0.500	0.500	0.0	13.5	13.5	93.0	O K
7200 min Summer	0.410	0.410	0.0	11.2	11.2	76.2	O K
8640 min Summer	0.328	0.328	0.0	9.9	9.9	61.0	O K
10080 min Summer	0.269	0.269	0.0	9.0	9.0	50.0	O K
15 min Winter	1.232	1.232	0.0	70.0	70.0	229.1	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	161.698	0.0	292.2	47
30 min Summer	106.079	0.0	383.4	56
60 min Summer	66.043	0.0	477.4	72
120 min Summer	40.674	0.0	588.2	106
180 min Summer	30.745	0.0	666.9	138
240 min Summer	25.190	0.0	728.5	170
360 min Summer	18.924	0.0	820.9	232
480 min Summer	15.309	0.0	885.4	292
600 min Summer	12.911	0.0	933.4	348
720 min Summer	11.192	0.0	970.9	404
960 min Summer	8.868	0.0	1025.8	512
1440 min Summer	6.306	0.0	1094.2	752
2160 min Summer	4.438	0.0	1154.9	1116
2880 min Summer	3.453	0.0	1198.3	1500
4320 min Summer	2.428	0.0	1263.7	2268
5760 min Summer	1.899	0.0	1317.9	3000
7200 min Summer	1.581	0.0	1371.7	3752
8640 min Summer	1.367	0.0	1423.4	4440
10080 min Summer	1.213	0.0	1473.8	5168
15 min Winter	161.698	0.0	327.2	47

EAS Transport Planning		Page 2
Unit 23, The Maltings Stanstead Abbotts Hertfordshire, SG12 8HG	BLOCK G & J GEOCELLULAR STORAGE OUTLINE	
Date 13/07/2022 23:21 File 20220713-Block G-J - Ge...	Designed by EAS Checked by	
Innovyze	Source Control 2020.1.3	

Summary of Results for 100 year Return Period (+45%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (1/s)	Max Control (1/s)	Max Σ Outflow (1/s)	Max Volume (m³)	Status
30 min Winter	1.589	1.589	0.0	70.0	70.0	295.6	O K
60 min Winter	1.882	1.882	0.0	70.0	70.0	350.2	O K
120 min Winter	3.991	3.991	0.0	70.0	70.0	370.4	Flood Risk
180 min Winter	1.934	1.934	0.0	70.0	70.0	359.7	O K
240 min Winter	1.816	1.816	0.0	70.0	70.0	337.7	O K
360 min Winter	1.505	1.505	0.0	70.0	70.0	279.9	O K
480 min Winter	1.202	1.202	0.0	70.0	70.0	223.5	O K
600 min Winter	1.007	1.007	0.0	70.0	70.0	187.3	O K
720 min Winter	0.968	0.968	0.0	62.1	62.1	180.1	O K
960 min Winter	0.919	0.919	0.0	49.7	49.7	170.9	O K
1440 min Winter	0.863	0.863	0.0	35.7	35.7	160.4	O K
2160 min Winter	0.820	0.820	0.0	25.1	25.1	152.6	O K
2880 min Winter	0.712	0.712	0.0	18.2	18.2	132.4	O K
4320 min Winter	0.492	0.492	0.0	13.3	13.3	91.5	O K
5760 min Winter	0.358	0.358	0.0	10.4	10.4	66.6	O K
7200 min Winter	0.252	0.252	0.0	8.8	8.8	46.8	O K
8640 min Winter	0.194	0.194	0.0	7.8	7.8	36.1	O K
10080 min Winter	0.172	0.172	0.0	6.9	6.9	32.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
30 min Winter	106.079	0.0	429.4	56
60 min Winter	66.043	0.0	534.8	74
120 min Winter	40.674	0.0	658.7	112
180 min Winter	30.745	0.0	746.9	146
240 min Winter	25.190	0.0	815.8	180
360 min Winter	18.924	0.0	919.4	242
480 min Winter	15.309	0.0	991.6	298
600 min Winter	12.911	0.0	1045.4	336
720 min Winter	11.192	0.0	1087.4	392
960 min Winter	8.868	0.0	1148.9	512
1440 min Winter	6.306	0.0	1225.5	752
2160 min Winter	4.438	0.0	1293.5	1124
2880 min Winter	3.453	0.0	1342.1	1580
4320 min Winter	2.428	0.0	1415.4	2300
5760 min Winter	1.899	0.0	1476.1	3064
7200 min Winter	1.581	0.0	1536.3	3768
8640 min Winter	1.367	0.0	1594.2	4416
10080 min Winter	1.213	0.0	1650.6	5144

Unit 23, The Maltings Stanstead Abbotts Hertfordshire, SG12 8HG	BLOCK G & J GEOCELLULAR STORAGE OUTLINE	
Date 13/07/2022 23:21 File 20220713-Block G-J - Ge...	Designed by EAS Checked by	

Innovyze Source Control 2020.1.3


Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	2013
Site Location	GB 623065 309383 TG 23065 09383
Data Type	Point
Summer Storms	Yes
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Shortest Storm (mins)	15
Longest Storm (mins)	10080
Climate Change %	+45

Time Area Diagram

Total Area (ha) 0.964

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From: To:	(ha)	From: To:	(ha)	From: To:	(ha)	From: To:	(ha)
0	4 0.096	12	16 0.096	24	28 0.097	36	40 0.097
4	8 0.096	16	20 0.096	28	32 0.097		
8	12 0.096	20	24 0.096	32	36 0.097		

Unit 23, The Maltings Stanstead Abbotts Hertfordshire, SG12 8HG	BLOCK G & J GEOCELLULAR STORAGE OUTLINE	
---	---	---

Date 13/07/2022 23:21 File 20220713-Block G-J - Ge...	Designed by EAS Checked by	
--	-------------------------------	--

Innovyze	Source Control 2020.1.3
----------	-------------------------

Model Details

Storage is Online Cover Level (m) 4.050

Cellular Storage Structure

Invert Level (m) 0.000 Safety Factor 2.0
 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
 Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	195.8	0.0	1.980	195.8	0.0
0.660	195.8	0.0	1.981	0.0	0.0
1.320	195.8	0.0			

Pump Outflow Control

Invert Level (m) 0.000

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.200	8.0000	1.800	70.0000	3.400	70.0000	5.000	70.0000
0.400	11.0000	2.000	70.0000	3.600	70.0000	5.200	70.0000
0.600	16.0000	2.200	70.0000	3.800	70.0000	5.400	70.0000
0.800	20.0000	2.400	70.0000	4.000	70.0000	5.600	70.0000
1.000	70.0000	2.600	70.0000	4.200	70.0000	5.800	70.0000
1.200	70.0000	2.800	70.0000	4.400	70.0000	6.000	70.0000
1.400	70.0000	3.000	70.0000	4.600	70.0000		
1.600	70.0000	3.200	70.0000	4.800	70.0000		

Unit 23, The Maltings
 Stanstead Abbotts
 Hertfordshire, SG12 8HG

BLOCK H
 GEOCELLULAR STORAGE
 OUTLINE



Date 13/07/2022 23:05
 File 20220713-Block H - Geoc...

Designed by EAS
 Checked by


Innovyze Source Control 2020.1.3

Summary of Results for 100 year Return Period (+45%)

Half Drain Time : 61 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	1.997	0.797	0.0	19.9	19.9	84.8	O K
30 min Summer	2.198	0.998	0.0	24.5	24.5	106.2	O K
60 min Summer	2.333	1.133	0.0	24.5	24.5	120.5	O K
120 min Summer	2.388	1.188	0.0	24.5	24.5	126.4	O K
180 min Summer	2.387	1.187	0.0	24.5	24.5	126.3	O K
240 min Summer	2.359	1.159	0.0	24.5	24.5	123.3	O K
360 min Summer	2.269	1.069	0.0	24.5	24.5	113.8	O K
480 min Summer	2.178	0.978	0.0	24.0	24.0	104.1	O K
600 min Summer	2.101	0.901	0.0	22.3	22.3	95.9	O K
720 min Summer	2.033	0.833	0.0	20.7	20.7	88.7	O K
960 min Summer	1.924	0.724	0.0	18.1	18.1	77.0	O K
1440 min Summer	1.772	0.572	0.0	14.3	14.3	60.8	O K
2160 min Summer	1.635	0.435	0.0	10.9	10.9	46.3	O K
2880 min Summer	1.553	0.353	0.0	8.8	8.8	37.6	O K
4320 min Summer	1.460	0.260	0.0	6.5	6.5	27.6	O K
5760 min Summer	1.408	0.208	0.0	5.2	5.2	22.1	O K
7200 min Summer	1.375	0.175	0.0	4.4	4.4	18.6	O K
8640 min Summer	1.353	0.153	0.0	3.8	3.8	16.2	O K
10080 min Summer	1.336	0.136	0.0	3.4	3.4	14.5	O K
15 min Winter	2.092	0.892	0.0	22.1	22.1	94.9	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	161.698	0.0	104.8	33
30 min Summer	106.079	0.0	137.6	42
60 min Summer	66.043	0.0	171.3	62
120 min Summer	40.674	0.0	211.1	94
180 min Summer	30.745	0.0	239.4	128
240 min Summer	25.190	0.0	261.5	162
360 min Summer	18.924	0.0	294.6	224
480 min Summer	15.309	0.0	317.8	286
600 min Summer	12.911	0.0	335.0	348
720 min Summer	11.192	0.0	348.5	410
960 min Summer	8.868	0.0	368.2	532
1440 min Summer	6.306	0.0	392.7	774
2160 min Summer	4.438	0.0	414.5	1136
2880 min Summer	3.453	0.0	430.1	1500
4320 min Summer	2.428	0.0	453.5	2216
5760 min Summer	1.899	0.0	473.0	2944
7200 min Summer	1.581	0.0	492.3	3680
8640 min Summer	1.367	0.0	510.9	4408
10080 min Summer	1.213	0.0	528.9	5144
15 min Winter	161.698	0.0	117.4	33

EAS Transport Planning		Page 2
Unit 23, The Maltings Stanstead Abbotts Hertfordshire, SG12 8HG	BLOCK H GEOCELLULAR STORAGE OUTLINE	
Date 13/07/2022 23:05 File 20220713-Block H - Geoc...	Designed by EAS Checked by	
Innovyze	Source Control 2020.1.3	

Summary of Results for 100 year Return Period (+45%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
30 min Winter	2.323	1.123	0.0	24.5	24.5	119.5	O K
60 min Winter	2.486	1.286	0.0	24.5	24.5	136.8	O K
120 min Winter	3.153	1.953	0.0	24.5	24.5	141.1	O K
180 min Winter	2.493	1.293	0.0	24.5	24.5	137.6	O K
240 min Winter	2.427	1.227	0.0	24.5	24.5	130.5	O K
360 min Winter	2.268	1.068	0.0	24.5	24.5	113.6	O K
480 min Winter	2.141	0.941	0.0	23.2	23.2	100.1	O K
600 min Winter	2.043	0.843	0.0	21.0	21.0	89.7	O K
720 min Winter	1.962	0.762	0.0	19.1	19.1	81.1	O K
960 min Winter	1.838	0.638	0.0	16.0	16.0	67.9	O K
1440 min Winter	1.679	0.479	0.0	12.0	12.0	51.0	O K
2160 min Winter	1.548	0.348	0.0	8.7	8.7	37.1	O K
2880 min Winter	1.475	0.275	0.0	6.9	6.9	29.3	O K
4320 min Winter	1.396	0.196	0.0	4.9	4.9	20.8	O K
5760 min Winter	1.354	0.154	0.0	3.9	3.9	16.4	O K
7200 min Winter	1.329	0.129	0.0	3.2	3.2	13.7	O K
8640 min Winter	1.311	0.111	0.0	2.8	2.8	11.9	O K
10080 min Winter	1.299	0.099	0.0	2.5	2.5	10.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
30 min Winter	106.079	0.0	154.1	43
60 min Winter	66.043	0.0	191.9	64
120 min Winter	40.674	0.0	236.4	102
180 min Winter	30.745	0.0	268.1	138
240 min Winter	25.190	0.0	292.9	172
360 min Winter	18.924	0.0	330.0	236
480 min Winter	15.309	0.0	355.9	298
600 min Winter	12.911	0.0	375.2	360
720 min Winter	11.192	0.0	390.3	422
960 min Winter	8.868	0.0	412.3	546
1440 min Winter	6.306	0.0	439.8	790
2160 min Winter	4.438	0.0	464.3	1152
2880 min Winter	3.453	0.0	481.7	1512
4320 min Winter	2.428	0.0	508.0	2228
5760 min Winter	1.899	0.0	529.8	2944
7200 min Winter	1.581	0.0	551.4	3680
8640 min Winter	1.367	0.0	572.2	4416
10080 min Winter	1.213	0.0	592.4	5144

Unit 23, The Maltings Stanstead Abbotts Hertfordshire, SG12 8HG	BLOCK H GEOCELLULAR STORAGE OUTLINE	
Date 13/07/2022 23:05 File 20220713-Block H - Geoc...	Designed by EAS Checked by	

Innovyze	Source Control 2020.1.3
----------	-------------------------

Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	2013
Site Location	GB 623065 309383 TG 23065 09383
Data Type	Point
Summer Storms	Yes
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Shortest Storm (mins)	15
Longest Storm (mins)	10080
Climate Change %	+45

Time Area Diagram

Total Area (ha) 0.346

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From: To:	(ha)	From: To:	(ha)	From: To:	(ha)
0 4	0.058	8 12	0.058	16 20	0.057
4 8	0.058	12 16	0.058	20 24	0.057

Unit 23, The Maltings
 Stanstead Abbotts
 Hertfordshire, SG12 8HG

BLOCK H
 GEOCELLULAR STORAGE
 OUTLINE



Date 13/07/2022 23:05
 File 20220713-Block H - Geoc...

Designed by EAS
 Checked by

Innovyze Source Control 2020.1.3

Model Details

Storage is Online Cover Level (m) 4.500

Cellular Storage Structure

Invert Level (m) 1.200 Safety Factor 2.0
 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
 Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	112.0	0.0	1.320	112.0	0.0
0.660	112.0	0.0	1.321	0.0	0.0

Pump Outflow Control

Invert Level (m) 1.200

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.200	5.0000	1.800	24.5000	3.400	24.5000	5.000	24.5000
0.400	10.0000	2.000	24.5000	3.600	24.5000	5.200	24.5000
0.600	15.0000	2.200	24.5000	3.800	24.5000	5.400	24.5000
0.800	20.0000	2.400	24.5000	4.000	24.5000	5.600	24.5000
1.000	24.5000	2.600	24.5000	4.200	24.5000	5.800	24.5000
1.200	24.5000	2.800	24.5000	4.400	24.5000	6.000	24.5000
1.400	24.5000	3.000	24.5000	4.600	24.5000		
1.600	24.5000	3.200	24.5000	4.800	24.5000		