

Pre-Development and Post-Development Discharge Rates TECHNICAL NOTE

4-8 Sedgemere Road

Client: Abbey Wood Sedgemere Limited

Date: 19/08/2025

P451519-WW-XX-XX-TN-C-0006

Rev	Date	Description	Prepared	Reviewed	Approved
P1	19/08/2025	First Issue	TT	SM	RW

This document is to be regarded as confidential to our client and is intended for their use only. Any liability to any third party in respect of the whole or any part of its contents is hereby expressly excluded. Before reproduction of its content, circulation or use by any third-party, our written approval and disclosure must be obtained.

whitby wood

LEVEL 1, FRIARS YARD
160 BLACKFRIARS ROAD
LONDON SE1 8EZ
UNITED KINGDOM

+44 (0)20 7442 2216

whitbywood.com

Whitby Wood Limited
reg in England and Wales
reg no 07786822

1 INTRODUCTION

This technical note has been produced to provide an overview of the existing and proposed discharge rates for foul and surface water for the proposals at 4-8 Sedgemere Road, London, SE2 9SW, under planning application reference 24/02488/FULM.

2 DISCHARGE RATES

2.1 Pre-development Discharge Rates

As the site is currently being used as a trade counter, car repair garage, workshop and ancillary storage space. The domestic design flow should be calculated in accordance with BS EN 12056-2 System II (see also BS EN 16933-2) or, in the absence of appropriate information, 0.6 litres per second per hectare of developable land as per the Sewage Sector Guidance. Therefore the approximate foul water flow rate for the site is estimated to be **0.16 l/s**.

The existing surface water discharge rates have been calculated using the Modified Rational Method. A percentage of impermeable area (PIMP) of 100% and a time of concentration of 5 minutes were assumed. A runoff coefficient of 1 has been used as the existing site is almost entirely impermeable. The results for the highlighted return periods can be shown in **Table 1** and **Appendix A**.

TABLE 1 – EXISTING DISCHARGE RATES

Return Period	Existing Discharge Rates (l/s)
1-year	53.8
2-year	69.1
30-year	127.1
100-year	161.1

2.2 Post- development discharge rates

The proposed development will consist of the demolition of the existing commercial buildings and phased redevelopment for residential use (Use Class C3) and ancillary amenity, including basement, ground floor non-residential unit (Use Class E(a), E(b), E(c), E(c)i, E(c)ii, E(c)iii, E(e), E(g)i, E(g)ii, F2(b), boundary treatment, soft and hard landscaping, public realm improvements, highways works, cycle and car parking infrastructure and associated works.

Foul wastewater is to increase from the existing development due to the increase in number of units and change in building use. Foul water design flow rates have been calculated at this time using 0.05 litres per second per dwelling, with a peak flow of **9.85 l/s**. The proposed outfall will be a gravity connection into Thames Water manhole 3201 in Harrow Manorway, which is a 950mm diameter network at the point of connection.

As shown in Table 1, the existing surface discharge rates for the site area have been calculated for the specified return periods. The proposed development should aim to achieve discharge rates as close to greenfield as possible. A discharge rate of **1 l/s** will be the proposed discharge rate for surface water which

is greater than a 98% betterment from the existing 1-year discharge rate, while maintaining a self-cleansing velocity. The amount of attenuation required for the proposed drainage scheme has been calculated to be 274m³. This is based on no flooding of the network or site for all storm events up to and including the 1 in 100-year storm event plus a 40% allowance for climate change. The hydraulic simulations can be shown in **Appendix B**.

A pre-planning enquiry has been submitted, and Thames Water have confirmed capacity consent for both foul and surface water discharging into Thames Water manhole 3201 in Harrow Manorway, subject to LLFA approval.

2.3 Betterment

The pre-development and post development combined discharge rates are shown in **Table 2** below. This demonstrates that in all storm return periods there is a betterment compared to the existing scenario. This confirms that the proposed drainage design will reduce capacity within the Thames Water network.

TABLE 2 – PRE-DEVELOPMENT VS POST-DEVELOPMENT DISCHARGE RATES

Return Period	Pre-Development Discharge Rate (l/s)			Post-Development Discharge Rate (l/s)			Betterment from existing
	Foul Water	Surface Water	Combined	Foul Water	Surface Water	Combined	
1-year	0.16	53.80	53.96	9.85	1.00	10.85	79.9
2-year	0.16	69.10	69.26	9.85	1.00	10.85	84.3
30-year	0.16	127.10	127.26	9.85	1.00	10.85	91.5
100-year	0.16	161.10	161.26	9.85	1.00	10.85	93.3

3 CONCLUSION

As demonstrated with the information presented above, there is a large betterment from the proposed drainage discharge rates when compared to the existing.

APPENDIX A – EXISTING DEVELOPMENT SURFACE WATER CALCS

PROPOSED RATES

Pre-development discharge

Site Makeup:
 Brownfield Method:
 Contributing Area (ha):
 PIMP (%):
 CV:
 Time of Concentration (mins):
 Betterment (%):

Return Period (years)	Q (l/s)
1	53.8
2	69.1
30	127.1
100	161.1

**EXISTING DISCHARGE RATES
- 0% BETTERMENT**

Pre-development discharge

Site Makeup:
 Brownfield Method:
 Contributing Area (ha):
 PIMP (%):
 CV:
 Time of Concentration (mins):
 Betterment (%):

Return Period (years)	Q (l/s)
1	26.9
2	34.5
30	63.6
100	80.6

**DISCHARGE RATES - 50%
BETTERMENT**

Pre-development discharge

Site Makeup:
 Brownfield Method:
 Contributing Area (ha):
 PIMP (%):
 CV:
 Time of Concentration (mins):
 Betterment (%):

Return Period (years)	Q (l/s)
1	1.1
2	1.4
30	2.5
100	3.2

**GREENFIELD DISCHARGE
RATES - > 98% BETTERMENT**

APPENDIX B – HYDRAULIC SIMULATIONS

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	100	Connection Type	Level Soffits
Additional Flow (%)	40	Minimum Backdrop Height (m)	0.200
CV	1.000	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	✓
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)
Outfall			2.200	1200	547353.785	179218.798	4.140
Blue roof - roof level	0.053	5.00	69.625	1200	547385.852	179187.097	0.150
Attenuation tank			1.360	1200	547397.090	179221.392	1.984
SW21	0.008	5.00	1.180	450	547400.712	179169.148	1.003
SW05	0.006	5.00	1.420	1200	547403.193	179197.558	1.709
SW10	0.007	5.00	1.440	450	547376.216	179159.618	1.010
SW09	0.014	5.00	1.310	1200	547392.373	179162.868	1.211
SW07	0.004	5.00	1.145	1200	547403.000	179181.607	1.263
SW18	0.003	5.00	2.086	450	547368.199	179196.161	2.066
SW11	0.007	5.00	1.800	450	547372.039	179176.059	0.946
SW17	0.014	5.00	1.890	450	547370.618	179202.311	1.936
SW01	0.005	5.00	1.880	1200	547366.796	179209.929	2.793
SW22	0.011	5.00	1.137	450	547409.540	179169.590	0.739
SW20	0.002	5.00	1.300	1200	547406.170	179180.040	1.110
SW03	0.013	5.00	1.300	1200	547391.194	179213.976	1.963
SW08	0.007	5.00	1.190	1200	547400.225	179174.898	1.235
SW16	0.006	5.00	1.630	450	547366.050	179217.993	1.510
SW15	0.006	5.00	1.880	450	547367.528	179212.046	1.821
SW14	0.008	5.00	1.390	450	547377.944	179225.881	1.300
SW13	0.016	5.00	1.390	450	547386.595	179226.852	1.518
Blue roof - L01	0.008	5.00	6.560	1200	547380.431	179166.702	1.300
SW04	0.013	5.00	1.240	1200	547399.191	179212.247	1.681
SW02	0.007	5.00	1.650	1200	547381.462	179210.730	2.416
SW06	0.006	5.00	1.190	1200	547400.040	179190.974	1.406
SW12	0.006	5.00	1.890	450	547370.360	179184.491	0.821

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)
1.002	SW10	SW09	16.481	0.600	0.430	0.224	0.206	80.0	100	5.67	50.0
1.003	SW09	SW08	14.366	0.600	0.099	-0.045	0.144	99.8	225	5.85	50.0
7.000	SW18	SW17	6.609	0.600	0.020	-0.046	0.066	100.0	100	5.14	50.0
1.001	SW11	SW10	16.963	0.600	0.854	0.430	0.424	40.0	100	5.35	50.0
7.001	SW17	SW01	8.523	0.600	-0.046	-0.131	0.085	100.0	100	5.33	50.0
1.012	SW01	Outfall	15.746	0.600	-0.912	-1.940	1.028	15.3	300	6.93	50.0
1.009	Attenuation tank	SW03	9.474	0.600	-0.624	-0.663	0.039	242.9	300	6.60	50.0
1.010	SW03	SW02	10.259	0.600	-0.663	-0.766	0.103	100.0	300	6.71	50.0
4.000	SW22	SW21	8.839	0.600	0.398	0.177	0.221	40.0	100	5.12	50.0
4.001	SW21	SW08	5.771	0.600	0.177	0.033	0.144	40.0	100	5.20	50.0
1.004	SW08	SW07	7.260	0.600	-0.045	-0.118	0.073	99.5	225	5.94	50.0
5.000	SW20	SW07	3.536	0.600	0.190	-0.118	0.308	11.5	100	5.03	50.0
6.001	SW13	Attenuation tank	11.830	0.600	-0.128	-0.424	0.296	40.0	100	5.28	50.0
8.000	SW16	SW15	6.128	0.600	0.120	0.059	0.061	100.0	100	5.13	50.0
8.001	SW15	SW01	2.240	0.600	0.059	0.037	0.022	100.0	100	5.18	50.0
1.000	SW12	SW11	8.598	0.600	1.069	0.854	0.215	40.0	100	5.12	50.0
2.000	Blue roof - roof level	SW09	25.091	0.600	69.475	0.224	69.251	0.4	100	5.03	50.0
6.000	SW14	SW13	8.705	0.600	0.090	-0.128	0.218	40.0	100	5.12	50.0
1.008	SW04	Attenuation tank	9.383	0.600	-0.441	-0.480	0.039	240.6	300	6.44	50.0
3.000	Blue roof - L01	SW09	12.542	0.600	5.260	0.224	5.036	2.5	100	5.04	50.0
1.007	SW05	SW04	15.224	0.600	-0.289	-0.441	0.152	100.2	300	6.29	50.0
1.011	SW02	SW01	14.688	0.600	-0.766	-0.913	0.147	100.0	300	6.86	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)
1.002	0.861	6.8	5.2	0.910	0.986	0.020	0.0
1.003	1.308	52.0	23.9	0.986	1.010	0.094	0.0
7.000	0.769	6.0	0.8	1.966	1.836	0.003	0.0
1.001	1.223	9.6	3.4	0.846	0.910	0.013	0.0
7.001	0.769	6.0	4.4	1.836	1.911	0.017	0.0
1.012	4.037	285.3	58.2	2.492	3.840	0.230	0.0
1.009	1.004	71.0	44.5	1.684	1.663	0.176	0.0
1.010	1.572	111.1	47.8	1.663	2.116	0.189	0.0
4.000	1.223	9.6	2.8	0.639	0.903	0.011	0.0
4.001	1.223	9.6	5.0	0.903	1.057	0.020	0.0
1.004	1.310	52.1	30.7	1.010	1.038	0.121	0.0
5.000	2.293	18.0	0.4	1.010	1.163	0.002	0.0
6.001	1.223	9.6	6.0	1.418	1.684	0.024	0.0
8.000	0.769	6.0	1.5	1.410	1.721	0.006	0.0
8.001	0.769	6.0	3.1	1.721	1.743	0.012	0.0
1.000	1.223	9.6	1.5	0.721	0.846	0.006	0.0
2.000	12.969	101.9	13.4	0.050	0.986	0.053	0.0
6.000	1.223	9.6	2.1	1.200	1.418	0.008	0.0
1.008	1.009	71.3	38.5	1.381	1.540	0.152	0.0
3.000	4.939	38.8	2.0	1.200	0.986	0.008	0.0
1.007	1.570	111.0	35.3	1.409	1.381	0.140	0.0
1.011	1.572	111.1	49.5	2.116	2.493	0.196	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)
1.005	SW07	SW06	9.824	0.600	-0.118	-0.216	0.098	100.2	300	6.05	50.0
1.006	SW06	SW05	7.300	0.600	-0.216	-0.289	0.073	100.0	300	6.12	50.0
1.000	SW12	SW11	8.676	0.600	0.717	0.517	0.200	43.4	100	5.12	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)
1.005	1.570	111.0	32.1	0.963	1.106	0.127	0.0
1.006	1.572	111.1	33.7	1.106	1.409	0.133	0.0
1.000					1.183		

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)
1.002	16.481	80.0	100	Circular	1.440	0.430	0.910	1.310	0.224	0.986
1.003	14.366	99.8	225	Circular	1.310	0.099	0.986	1.190	-0.045	1.010
7.000	6.609	100.0	100	Circular	2.086	0.020	1.966	1.890	-0.046	1.836
1.001	16.963	40.0	100	Circular	1.800	0.854	0.846	1.440	0.430	0.910
7.001	8.523	100.0	100	Circular	1.890	-0.046	1.836	1.880	-0.131	1.911
1.012	15.746	15.3	300	Circular	1.880	-0.912	2.492	2.200	-1.940	3.840
1.009	9.474	242.9	300	Circular	1.360	-0.624	1.684	1.300	-0.663	1.663
1.010	10.259	100.0	300	Circular	1.300	-0.663	1.663	1.650	-0.766	2.116
4.000	8.839	40.0	100	Circular	1.137	0.398	0.639	1.180	0.177	0.903
4.001	5.771	40.0	100	Circular	1.180	0.177	0.903	1.190	0.033	1.057
1.004	7.260	99.5	225	Circular	1.190	-0.045	1.010	1.145	-0.118	1.038
5.000	3.536	11.5	100	Circular	1.300	0.190	1.010	1.145	-0.118	1.163
6.001	11.830	40.0	100	Circular	1.390	-0.128	1.418	1.360	-0.424	1.684
8.000	6.128	100.0	100	Circular	1.630	0.120	1.410	1.880	0.059	1.721
8.001	2.240	100.0	100	Circular	1.880	0.059	1.721	1.880	0.037	1.743
1.000	8.598	40.0	100	Circular	1.890	1.069	0.721	1.800	0.854	0.846
2.000	25.091	0.4	100	Circular	69.625	69.475	0.050	1.310	0.224	0.986



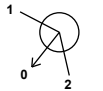



Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.002	SW10	450	Manhole	Adoptable	SW09	1200	Manhole	Adoptable
1.003	SW09	1200	Manhole	Adoptable	SW08	1200	Manhole	Adoptable
7.000	SW18	450	Manhole	Adoptable	SW17	450	Manhole	Adoptable
1.001	SW11	450	Manhole	Adoptable	SW10	450	Manhole	Adoptable
7.001	SW17	450	Manhole	Adoptable	SW01	1200	Manhole	Adoptable
1.012	SW01	1200	Manhole	Adoptable	Outfall	1200	Manhole	Adoptable
1.009	Attenuation tank	1200	Manhole	Adoptable	SW03	1200	Manhole	Adoptable
1.010	SW03	1200	Manhole	Adoptable	SW02	1200	Manhole	Adoptable
4.000	SW22	450	Manhole	Adoptable	SW21	450	Manhole	Adoptable
4.001	SW21	450	Manhole	Adoptable	SW08	1200	Manhole	Adoptable
1.004	SW08	1200	Manhole	Adoptable	SW07	1200	Manhole	Adoptable
5.000	SW20	1200	Manhole	Adoptable	SW07	1200	Manhole	Adoptable
6.001	SW13	450	Manhole	Adoptable	Attenuation tank	1200	Manhole	Adoptable
8.000	SW16	450	Manhole	Adoptable	SW15	450	Manhole	Adoptable
8.001	SW15	450	Manhole	Adoptable	SW01	1200	Manhole	Adoptable
1.000	SW12	450	Manhole	Adoptable	SW11	450	Manhole	Adoptable
2.000	Blue roof - roof level	1200	Manhole	Adoptable	SW09	1200	Manhole	Adoptable

Pipeline Schedule






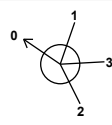







Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
6.000	8.705	40.0	100	Circular	1.390	0.090	1.200	1.390	-0.128	1.418
1.008	9.383	240.6	300	Circular	1.240	-0.441	1.381	1.360	-0.480	1.540
3.000	12.542	2.5	100	Circular	6.560	5.260	1.200	1.310	0.224	0.986
1.007	15.224	100.2	300	Circular	1.420	-0.289	1.409	1.240	-0.441	1.381
1.011	14.688	100.0	300	Circular	1.650	-0.766	2.116	1.880	-0.913	2.493
1.005	9.824	100.2	300	Circular	1.145	-0.118	0.963	1.190	-0.216	1.106
1.006	7.300	100.0	300	Circular	1.190	-0.216	1.106	1.420	-0.289	1.409
1.000	8.676	43.4	100			0.717		1.800	0.517	1.183

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
6.000	SW14	450	Manhole	Adoptable	SW13	450	Manhole	Adoptable
1.008	SW04	1200	Manhole	Adoptable	Attenuation tank	1200	Manhole	Adoptable
3.000	Blue roof - L01	1200	Manhole	Adoptable	SW09	1200	Manhole	Adoptable
1.007	SW05	1200	Manhole	Adoptable	SW04	1200	Manhole	Adoptable
1.011	SW02	1200	Manhole	Adoptable	SW01	1200	Manhole	Adoptable
1.005	SW07	1200	Manhole	Adoptable	SW06	1200	Manhole	Adoptable
1.006	SW06	1200	Manhole	Adoptable	SW05	1200	Manhole	Adoptable
1.000					SW11	450	Manhole	Adoptable



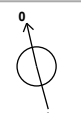
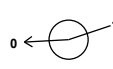


Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
Outfall	547353.785	179218.798	2.200	4.140	1200	 1	1.012	-1.940	300
Blue roof - roof level	547385.852	179187.097	69.625	0.150	1200	 0	2.000	69.475	100
Attenuation tank	547397.090	179221.392	1.360	1.984	1200	 1 2 0	6.001 1.008	-0.424 -0.480	100 300
SW21	547400.712	179169.148	1.180	1.003	450	 0 1	4.000	0.177	100
SW05	547403.193	179197.558	1.420	1.709	1200	 0 1	1.006	-0.289	300
SW10	547376.216	179159.618	1.440	1.010	450	 1 0	1.001 1.002	0.430 0.430	100 100

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
SW09	547392.373	179162.868	1.310	1.211	1200		1 2 3 0	3.000 2.000 1.002 1.003	0.224 0.224 0.224 0.099	100 100 100 225
SW07	547403.000	179181.607	1.145	1.263	1200		1 2 0	5.000 1.004 1.005	-0.118 -0.118 -0.118	100 225 300
SW18	547368.199	179196.161	2.086	2.066	450		0	7.000	0.020	100
SW11	547372.039	179176.059	1.800	0.946	450		1 0	1.000 1.001	0.854 0.854	100 100
SW17	547370.618	179202.311	1.890	1.936	450		1 0	7.000 7.001	-0.046 -0.046	100 100
SW01	547366.796	179209.929	1.880	2.793	1200		1 2 3 0	8.001 7.001 1.011 1.012	0.037 -0.131 -0.913 -0.912	100 100 300 300
SW22	547409.540	179169.590	1.137	0.739	450		0	4.000	0.398	100
SW20	547406.170	179180.040	1.300	1.110	1200		0	5.000	0.190	100
SW03	547391.194	179213.976	1.300	1.963	1200		1 0	1.009 1.010	-0.663 -0.663	300 300
SW08	547400.225	179174.898	1.190	1.235	1200		1 2 0	4.001 1.003 1.004	0.033 -0.045 -0.045	100 225 225
SW16	547366.050	179217.993	1.630	1.510	450		0	8.000	0.120	100
SW15	547367.528	179212.046	1.880	1.821	450		1 0	8.000 8.001	0.059 0.059	100 100
SW14	547377.944	179225.881	1.390	1.300	450		0	6.000	0.090	100

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
SW13	547386.595	179226.852	1.390	1.518	450	1 	6.000	-0.128	100
						0	6.001	-0.128	100
Blue roof - L01	547380.431	179166.702	6.560	1.300	1200				
						0	3.000	5.260	100
SW04	547399.191	179212.247	1.240	1.681	1200	0 	1.007	-0.441	300
						1	1.008	-0.441	300
SW02	547381.462	179210.730	1.650	2.416	1200	0 	1.010	-0.766	300
						1	1.011	-0.766	300
SW06	547400.040	179190.974	1.190	1.406	1200	0 	1.005	-0.216	300
						1	1.006	-0.216	300
SW12	547370.360	179184.491	1.890	0.821	450				
						0	1.000	1.069	100

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	1.000	Drain Down Time (mins)	240	Check Discharge Volume	x
Winter CV	1.000	Additional Storage (m ³ /ha)	20.0		

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	35	0	0
100	40	0	0

Node SW01 Online Hydro-Brake® Control

Flap Valve	x	Objective (HE)	Minimise upstream storage
Downstream Link	1.012	Sump Available	✓
Replaces Downstream Link	x	Product Number	CTL-SHE-0038-1000-2400-1000
Invert Level (m)	-0.912	Min Outlet Diameter (m)	0.075
Design Depth (m)	2.400	Min Node Diameter (mm)	1200
Design Flow (l/s)	1.0		

Node Blue roof - roof level Online Depth/Flow Control

Flap Valve	x	Invert Level (m)	69.475	Design Flow (l/s)	6.0
Replaces Downstream Link	✓	Design Depth (m)	0.100		

Depth (m)	Flow (l/s)
0.100	6.000

Node Blue roof - L01 Online Depth/Flow Control

Flap Valve	x	Invert Level (m)	5.260	Design Flow (l/s)	3.0
Replaces Downstream Link	✓	Design Depth (m)	0.100		

Depth (m)	Flow (l/s)
0.100	3.000

Node Attenuation tank Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	-0.624
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

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	145.0	0.0	1.200	145.0	0.0	1.201	0.0	0.0

Node Blue roof - L01 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	5.260
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	5

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	56.0	0.0	0.100	56.0	0.0	0.101	0.0	0.0

Node Blue roof - roof level Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	69.475
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

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	255.0	0.0	0.100	255.0	0.0	0.101	0.0	0.0

Node SW22 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	0.600	Slope (1:X)	200.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.400
Safety Factor	2.0	Width (m)	8.000	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node SW09 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	0.750	Slope (1:X)	200.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.400
Safety Factor	2.0	Width (m)	6.000	Inf Depth (m)	
Porosity	0.30	Length (m)	2.000		

Node SW10 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	0.760	Slope (1:X)	200.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.400
Safety Factor	2.0	Width (m)	2.000	Inf Depth (m)	
Porosity	0.30	Length (m)	6.000		

Node SW21 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	0.900	Slope (1:X)	200.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.400
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	4.000		

Node SW08 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	0.800	Slope (1:X)	200.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.400
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	2.000		

Node SW07 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	0.490	Slope (1:X)	200.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.400
Safety Factor	2.0	Width (m)	2.000	Inf Depth (m)	
Porosity	0.30	Length (m)	5.000		

Node SW04 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	0.690	Slope (1:X)	200.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.400
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	2.000		

Node SW03 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	0.790	Slope (1:X)	200.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.400
Safety Factor	2.0	Width (m)	5.000	Inf Depth (m)	
Porosity	0.30	Length (m)	2.000		

Node SW16 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	0.870	Slope (1:X)	200.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	90	Depth (m)	0.400
Safety Factor	2.0	Width (m)	2.000	Inf Depth (m)	
Porosity	0.30	Length (m)	2.000		

Node SW15 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	0.780	Slope (1:X)	200.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	255	Depth (m)	0.400
Safety Factor	2.0	Width (m)	7.000	Inf Depth (m)	
Porosity	0.30	Length (m)	2.000		

Node SW17 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	0.790	Slope (1:X)	200.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	210	Depth (m)	0.400
Safety Factor	2.0	Width (m)	2.000	Inf Depth (m)	
Porosity	0.30	Length (m)	7.000		

Node SW01 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	0.780	Slope (1:X)	200.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	240	Depth (m)	0.400
Safety Factor	2.0	Width (m)	4.000	Inf Depth (m)	
Porosity	0.30	Length (m)	4.000		

Node SW02 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	0.800	Slope (1:X)	200.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	195	Depth (m)	0.400
Safety Factor	2.0	Width (m)	2.000	Inf Depth (m)	
Porosity	0.30	Length (m)	4.000		

Node SW06 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	0.490	Slope (1:X)	200.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.400
Safety Factor	2.0	Width (m)	2.000	Inf Depth (m)	
Porosity	0.30	Length (m)	3.000		

Node SW05 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	0.600	Slope (1:X)	200.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.400
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	16.000		

Node SW20 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	0.800	Slope (1:X)	200.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.400
Safety Factor	2.0	Width (m)	5.000	Inf Depth (m)	
Porosity	0.30	Length (m)	2.000		

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

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
480 minute winter	Outfall	456	-1.930	0.010	0.5	0.0000	0.0000	OK
180 minute summer	Blue roof - roof level	116	69.497	0.022	3.5	5.4291	0.0000	OK
480 minute winter	Attenuation tank	456	-0.345	0.279	4.1	38.8109	0.0000	OK
15 minute summer	SW21	10	0.221	0.044	3.5	0.0145	0.0000	OK
15 minute summer	SW05	11	-0.214	0.075	14.1	0.0899	0.0000	OK
15 minute summer	SW10	11	0.482	0.052	3.5	0.0155	0.0000	OK
15 minute summer	SW09	11	0.153	0.054	6.4	0.0728	0.0000	OK
15 minute summer	SW07	11	-0.047	0.071	12.0	0.0848	0.0000	OK
15 minute winter	SW18	11	0.039	0.019	0.5	0.0037	0.0000	OK
15 minute summer	SW11	10	0.887	0.033	2.3	0.0105	0.0000	OK
15 minute summer	SW17	10	0.006	0.052	3.0	0.0158	0.0000	OK
480 minute winter	SW01	456	-0.345	0.568	1.5	0.6628	0.0000	SURCHARGED
15 minute summer	SW22	10	0.429	0.031	2.0	0.0143	0.0000	OK
15 minute winter	SW20	11	0.199	0.009	0.3	0.0105	0.0000	OK
480 minute winter	SW03	456	-0.345	0.318	1.1	0.4025	0.0000	SURCHARGED
15 minute summer	SW08	11	0.031	0.076	11.0	0.0949	0.0000	OK
15 minute summer	SW16	11	0.148	0.028	1.0	0.0066	0.0000	OK
15 minute summer	SW15	11	0.104	0.045	2.1	0.0104	0.0000	OK
15 minute summer	SW14	10	0.117	0.027	1.5	0.0076	0.0000	OK
15 minute summer	SW13	10	-0.080	0.048	4.2	0.0174	0.0000	OK
120 minute summer	Blue roof - L01	74	5.270	0.010	0.7	0.5669	0.0000	OK
15 minute summer	SW04	11	-0.338	0.103	16.2	0.1325	0.0000	OK
480 minute winter	SW02	456	-0.345	0.421	1.2	0.4994	0.0000	SURCHARGED
15 minute summer	SW06	11	-0.140	0.076	13.1	0.0920	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
180 minute summer	Blue roof - roof level	Depth/Flow	SW09	1.3				
480 minute winter	Attenuation tank	1.009	SW03	1.0	0.397	0.014	0.6573	
15 minute summer	SW21	4.001	SW08	3.4	1.073	0.359	0.0185	
15 minute summer	SW05	1.007	SW04	14.1	0.806	0.127	0.2675	
15 minute summer	SW10	1.002	SW09	3.5	0.853	0.510	0.0667	
15 minute summer	SW09	1.003	SW08	6.4	0.680	0.124	0.1369	
15 minute summer	SW07	1.005	SW06	12.1	0.909	0.109	0.1305	
15 minute winter	SW18	7.000	SW17	0.5	0.210	0.083	0.0164	
15 minute summer	SW11	1.001	SW10	2.3	0.719	0.237	0.0540	
15 minute summer	SW17	7.001	SW01	2.9	0.741	0.487	0.0338	
480 minute winter	SW01	1.012	Outfall	0.5	0.791	0.002	0.0105	19.1
15 minute summer	SW22	4.000	SW21	2.0	0.736	0.207	0.0239	
15 minute winter	SW20	5.000	SW07	0.3	0.110	0.017	0.0107	
480 minute winter	SW03	1.010	SW02	1.1	0.411	0.010	0.7224	
15 minute summer	SW08	1.004	SW07	11.0	0.981	0.212	0.0817	
15 minute summer	SW16	8.000	SW15	1.0	0.389	0.166	0.0159	
15 minute summer	SW15	8.001	SW01	2.1	0.652	0.348	0.0072	
15 minute summer	SW14	6.000	SW13	1.5	0.559	0.154	0.0233	
15 minute summer	SW13	6.001	Attenuation tank	4.1	1.148	0.431	0.0426	
120 minute summer	Blue roof - L01	Depth/Flow	SW09	0.3				
15 minute summer	SW04	1.008	Attenuation tank	16.0	0.785	0.224	0.1912	
480 minute winter	SW02	1.011	SW01	1.0	0.065	0.009	1.0343	
15 minute summer	SW06	1.006	SW05	13.1	0.951	0.118	0.1005	

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

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	SW12	11	1.091	0.022	1.0	0.0066	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	SW12	1.000	SW11	1.0	0.578	0.104	0.0152	

Results for 30 year +35% CC Critical Storm Duration. Lowest mass balance: 99.05%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
720 minute winter	Outfall	720	-1.928	0.012	0.8	0.0000	0.0000	OK
120 minute summer	Blue roof - roof level	80	69.549	0.074	15.7	18.5199	0.0000	OK
720 minute winter	Attenuation tank	720	0.462	1.086	12.7	150.7741	0.0000	SURCHARGED
720 minute winter	SW21	705	0.464	0.287	1.0	0.0938	0.0000	SURCHARGED
720 minute winter	SW05	720	0.461	0.750	12.1	0.9038	0.0000	SURCHARGED
15 minute summer	SW10	13	0.864	0.434	12.3	0.4510	0.0000	SURCHARGED
720 minute winter	SW09	705	0.463	0.364	4.1	0.4938	0.0000	SURCHARGED
720 minute winter	SW07	705	0.464	0.582	5.8	0.6968	0.0000	SURCHARGED
720 minute winter	SW18	720	0.461	0.441	0.2	0.0838	0.0000	SURCHARGED
15 minute summer	SW11	12	1.168	0.314	8.9	0.0992	0.0000	SURCHARGED
720 minute winter	SW17	720	0.462	0.508	0.9	0.1550	0.0000	SURCHARGED
720 minute winter	SW01	720	0.462	1.375	1.7	1.6032	0.0000	SURCHARGED
15 minute summer	SW22	11	0.602	0.204	7.9	0.0961	0.0000	SURCHARGED
720 minute winter	SW20	705	0.465	0.275	0.2	0.3189	0.0000	SURCHARGED
720 minute winter	SW03	720	0.462	1.125	1.8	1.4223	0.0000	SURCHARGED
720 minute winter	SW08	705	0.464	0.509	5.5	0.6341	0.0000	SURCHARGED
720 minute winter	SW16	720	0.460	0.340	0.3	0.0809	0.0000	SURCHARGED
720 minute winter	SW15	720	0.461	0.402	0.6	0.0921	0.0000	SURCHARGED
15 minute summer	SW14	12	0.463	0.373	5.8	0.1072	0.0000	SURCHARGED
720 minute winter	SW13	720	0.462	0.590	1.2	0.2148	0.0000	SURCHARGED
60 minute summer	Blue roof - L01	41	5.298	0.038	3.4	2.0567	0.0000	OK
720 minute winter	SW04	720	0.461	0.902	7.1	1.1560	0.0000	SURCHARGED
720 minute winter	SW02	720	0.461	1.227	1.5	1.4544	0.0000	SURCHARGED
720 minute winter	SW06	705	0.461	0.677	10.1	0.8252	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
120 minute summer	Blue roof - roof level	Depth/Flow	SW09	4.4				
720 minute winter	Attenuation tank	1.009	SW03	-1.8	0.364	-0.025	0.6672	
720 minute winter	SW21	4.001	SW08	1.0	0.775	0.104	0.0452	
720 minute winter	SW05	1.007	SW04	6.5	0.570	0.059	1.0721	
15 minute summer	SW10	1.002	SW09	10.4	1.330	1.539	0.1276	
720 minute winter	SW09	1.003	SW08	4.1	0.712	0.079	0.5714	
720 minute winter	SW07	1.005	SW06	9.8	0.773	0.089	0.6918	
720 minute winter	SW18	7.000	SW17	0.2	0.189	0.038	0.0517	
15 minute summer	SW11	1.001	SW10	7.5	0.964	0.785	0.1327	
720 minute winter	SW17	7.001	SW01	0.9	0.544	0.149	0.0667	
720 minute winter	SW01	1.012	Outfall	0.8	0.887	0.003	0.0138	36.0
15 minute summer	SW22	4.000	SW21	7.1	0.910	0.741	0.0692	
720 minute winter	SW20	5.000	SW07	-0.2	0.081	-0.012	0.0277	
720 minute winter	SW03	1.010	SW02	1.5	0.366	0.013	0.7224	
720 minute winter	SW08	1.004	SW07	5.5	0.855	0.105	0.2887	
720 minute winter	SW16	8.000	SW15	0.3	0.291	0.050	0.0479	
720 minute winter	SW15	8.001	SW01	0.6	0.470	0.099	0.0175	
15 minute summer	SW14	6.000	SW13	5.2	0.668	0.544	0.0681	
720 minute winter	SW13	6.001	Attenuation tank	1.2	0.706	0.125	0.0926	
60 minute summer	Blue roof - L01	Depth/Flow	SW09	1.1				
720 minute winter	SW04	1.008	Attenuation tank	9.8	0.513	0.137	0.6607	
720 minute winter	SW02	1.011	SW01	1.4	0.068	0.013	1.0343	
720 minute winter	SW06	1.006	SW05	11.8	0.766	0.106	0.5141	

Results for 30 year +35% CC Critical Storm Duration. Lowest mass balance: 99.05%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute summer	SW12	12	1.201	0.132	4.2	0.0402	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute summer	SW12	1.000	SW11	3.9	0.784	0.408	0.0673	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 98.19%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
960 minute winter	Outfall	945	-1.927	0.013	0.9	0.0000	0.0000	OK
120 minute summer	Blue roof - roof level	80	69.575	0.100	21.2	25.0138	0.0000	OK
960 minute winter	Attenuation tank	945	1.115	1.739	12.1	167.3354	0.0000	FLOOD RISK
960 minute winter	SW21	945	1.116	0.939	1.3	2.7836	0.0000	FLOOD RISK
960 minute winter	SW05	945	1.115	1.404	11.1	19.0002	0.0000	SURCHARGED
960 minute winter	SW10	945	1.116	0.686	1.1	1.4320	0.0000	SURCHARGED
960 minute winter	SW09	945	1.117	1.018	4.7	2.6833	0.0000	FLOOD RISK
960 minute winter	SW07	945	1.116	1.234	6.0	2.6419	0.0000	FLOOD RISK
960 minute winter	SW18	945	1.116	1.096	0.2	0.2082	0.0000	SURCHARGED
15 minute summer	SW11	12	1.429	0.575	10.4	0.1818	0.0000	SURCHARGED
960 minute winter	SW17	945	1.115	1.161	0.9	1.6493	0.0000	SURCHARGED
960 minute winter	SW01	945	1.114	2.027	1.7	3.9211	0.0000	SURCHARGED
960 minute winter	SW22	945	1.116	0.718	1.6	9.3471	0.0000	FLOOD RISK
960 minute winter	SW20	945	1.117	0.927	0.3	2.0139	0.0000	FLOOD RISK
960 minute winter	SW03	945	1.114	1.777	1.9	3.2054	0.0000	FLOOD RISK
960 minute winter	SW08	945	1.117	1.162	5.9	3.3190	0.0000	FLOOD RISK
960 minute winter	SW16	945	1.116	0.996	0.4	0.5261	0.0000	SURCHARGED
960 minute winter	SW15	945	1.114	1.055	0.6	1.6237	0.0000	SURCHARGED
960 minute winter	SW14	945	1.113	1.023	0.4	0.2937	0.0000	FLOOD RISK
960 minute winter	SW13	945	1.114	1.242	1.2	0.4521	0.0000	FLOOD RISK
60 minute summer	Blue roof - L01	41	5.312	0.052	4.7	2.8196	0.0000	OK
960 minute winter	SW04	945	1.115	1.556	7.5	4.3672	0.0000	FLOOD RISK
960 minute winter	SW02	945	1.115	1.881	1.4	2.9625	0.0000	SURCHARGED
960 minute winter	SW06	945	1.116	1.332	7.8	2.3308	0.0000	FLOOD RISK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
120 minute summer	Blue roof - roof level	Depth/Flow	SW09	6.0				
960 minute winter	Attenuation tank	1.009	SW03	-1.8	0.354	-0.025	0.6672	
960 minute winter	SW21	4.001	SW08	-1.1	0.775	-0.116	0.0452	
960 minute winter	SW05	1.007	SW04	6.9	0.549	0.062	1.0721	
960 minute winter	SW10	1.002	SW09	1.1	0.630	0.163	0.1290	
960 minute winter	SW09	1.003	SW08	4.5	0.705	0.087	0.5714	
960 minute winter	SW07	1.005	SW06	7.5	0.753	0.067	0.6918	
960 minute winter	SW18	7.000	SW17	0.2	0.187	0.033	0.0517	
15 minute summer	SW11	1.001	SW10	8.9	1.142	0.931	0.1327	
960 minute winter	SW17	7.001	SW01	0.9	0.508	0.148	0.0667	
960 minute winter	SW01	1.012	Outfall	0.9	0.932	0.003	0.0156	50.8
960 minute winter	SW22	4.000	SW21	-1.2	0.548	-0.130	0.0692	
960 minute winter	SW20	5.000	SW07	-0.3	0.080	-0.018	0.0277	
960 minute winter	SW03	1.010	SW02	1.3	0.336	0.012	0.7224	
960 minute winter	SW08	1.004	SW07	5.7	0.816	0.110	0.2887	
960 minute winter	SW16	8.000	SW15	0.3	0.291	0.057	0.0479	
960 minute winter	SW15	8.001	SW01	0.6	0.470	0.099	0.0175	
960 minute winter	SW14	6.000	SW13	0.4	0.404	0.042	0.0681	
960 minute winter	SW13	6.001	Attenuation tank	1.1	0.642	0.118	0.0926	
60 minute summer	Blue roof - L01	Depth/Flow	SW09	1.6				
960 minute winter	SW04	1.008	Attenuation tank	9.3	0.469	0.131	0.6607	
960 minute winter	SW02	1.011	SW01	1.4	0.072	0.012	1.0343	
960 minute winter	SW06	1.006	SW05	10.8	0.720	0.097	0.5141	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 98.19%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute summer	SW12	12	1.475	0.406	5.6	0.1233	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute summer	SW12	1.000	SW11	4.2	0.746	0.438	0.0673	