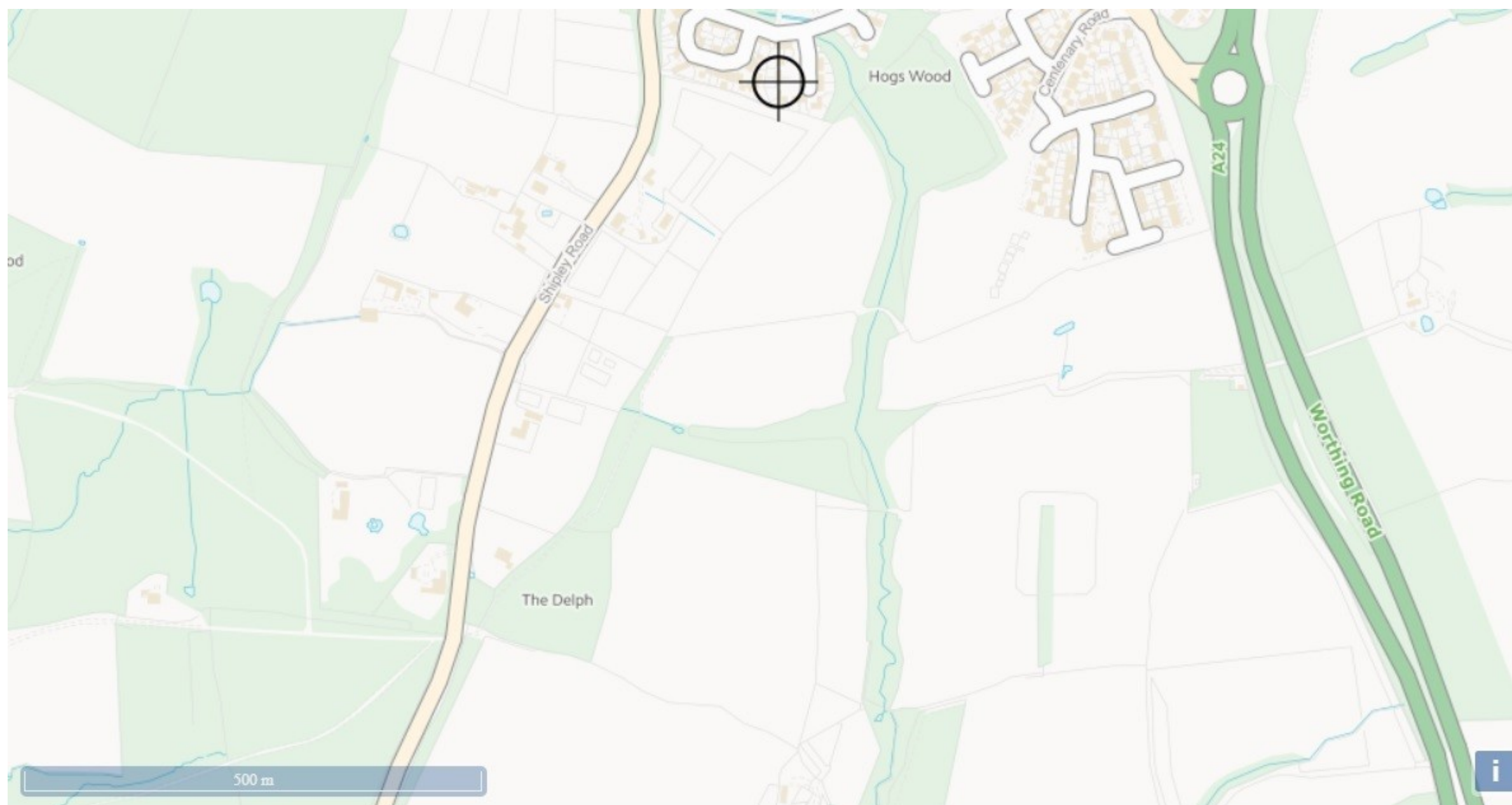




Extent of flooding from rivers or the sea

● High ● Medium ● Low ● Very low ⊕ Location you selected

Appendix H

QBar Calculations

Greenfield runoff rate estimation for sites

www.uksuds.com | Greenfield runoff tool

Calculated by:	victoria berg-holdo
Site name:	Woodfords
Site location:	Woodfords

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Site Details

Latitude:	51.01324° N
Longitude:	0.35249° W
Reference:	2902456036
Date:	Oct 02 2020 16:26

Runoff estimation approach

Site characteristics

Total site area (ha):	1
-----------------------	--------------------------------

Methodology

Q _{BAR} estimation method:	Calculate from SPR and SAAR
SPR estimation method:	Calculate from SOIL type

Soil characteristics

	Default	Edited
SOIL type:	4	4
HOST class:	N/A	N/A
SPR/SPRHOST:	0.47	0.47

Hydrological characteristics

	Default	Edited
SAAR (mm):	776	776
Hydrological region:	7	7
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 30 years:	2.3	2.3
Growth curve factor 100 years:	3.19	3.19
Growth curve factor 200 years:	3.74	3.74

Notes

(1) Is $Q_{\text{BAR}} < 2.0$ l/s/ha?

When Q_{BAR} is < 2.0 l/s/ha then limiting discharge rates are set at 2.0 l/s/ha.

(2) Are flow rates < 5.0 l/s?

Where flow rates are less than 5.0 l/s consent for discharge is usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.

(3) Is $\text{SPR}/\text{SPRHOST} \leq 0.3$?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.

Greenfield runoff rates

	Default	Edited
Q _{BAR} (l/s):	5.45	5.45
1 in 1 year (l/s):	4.63	4.63
1 in 30 years (l/s):	12.53	12.53
1 in 100 year (l/s):	17.37	17.37
1 in 200 years (l/s):	20.37	20.37

This report was produced using the greenfield runoff tool developed by HR Wallingford and available at www.uksuds.com. The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at www.uksuds.com/terms-and-conditions.htm. The outputs from this tool are estimates of greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, CEH, Hydrosolutions or any other organisation for the use of this data in the design or operational characteristics of any drainage scheme.

Appendix I

MicroDrainage model results Catchment A

Variables

Results

Design

Overview 2D

Overview 3D

Vt

Variables

FSR Rainfall

Return Period (years)

Region

Map

M5-60 (mm)

Ratio R

Cv (Summer)

Cv (Winter)

Impervious Area (ha)

Maximum Allowable Discharge (l/s)

Infiltration Coefficient (m/hr)

Safety Factor

Climate Change (%)

100

England and Wales

20.000

0.357

0.750

0.840

0.700

3.8

0.00000

2.0

40

Analyse

OK

Cancel

Help

Enter Ratio R between 0.050 and 0.500

Variables

Results

Design

Overview 2D

Overview 3D

Vt

Results

Global Variables require approximate storage of between 471 m³ and 659 m³.

These values are estimates only and should not be used for design purposes.

Analyse

OK

Cancel

Help

Enter Ratio R between 0.050 and 0.500

Appendix J

MicroDrainage model results Catchment B

Variables

Results

Design

Overview 2D

Overview 3D

Vt

Variables

FSR Rainfall

Return Period (years) 100

Region England and Wales

Map

M5-60 (mm) 20.000

Ratio R 0.357

Cv (Summer) 0.750

Cv (Winter) 0.840

Impervious Area (ha) 0.750

Maximum Allowable Discharge (l/s) 4.1

Infiltration Coefficient (m/hr) 0.00000

Safety Factor 2.0

Climate Change (%) 40

Analyse

OK

Cancel

Help

Enter Area between 0.000 and 999.999

Variables

Results

Design

Overview 2D

Overview 3D

Vt

Results

Global Variables require approximate storage of between 503 m³ and 704 m³.

These values are estimates only and should not be used for design purposes.

Analyse

OK

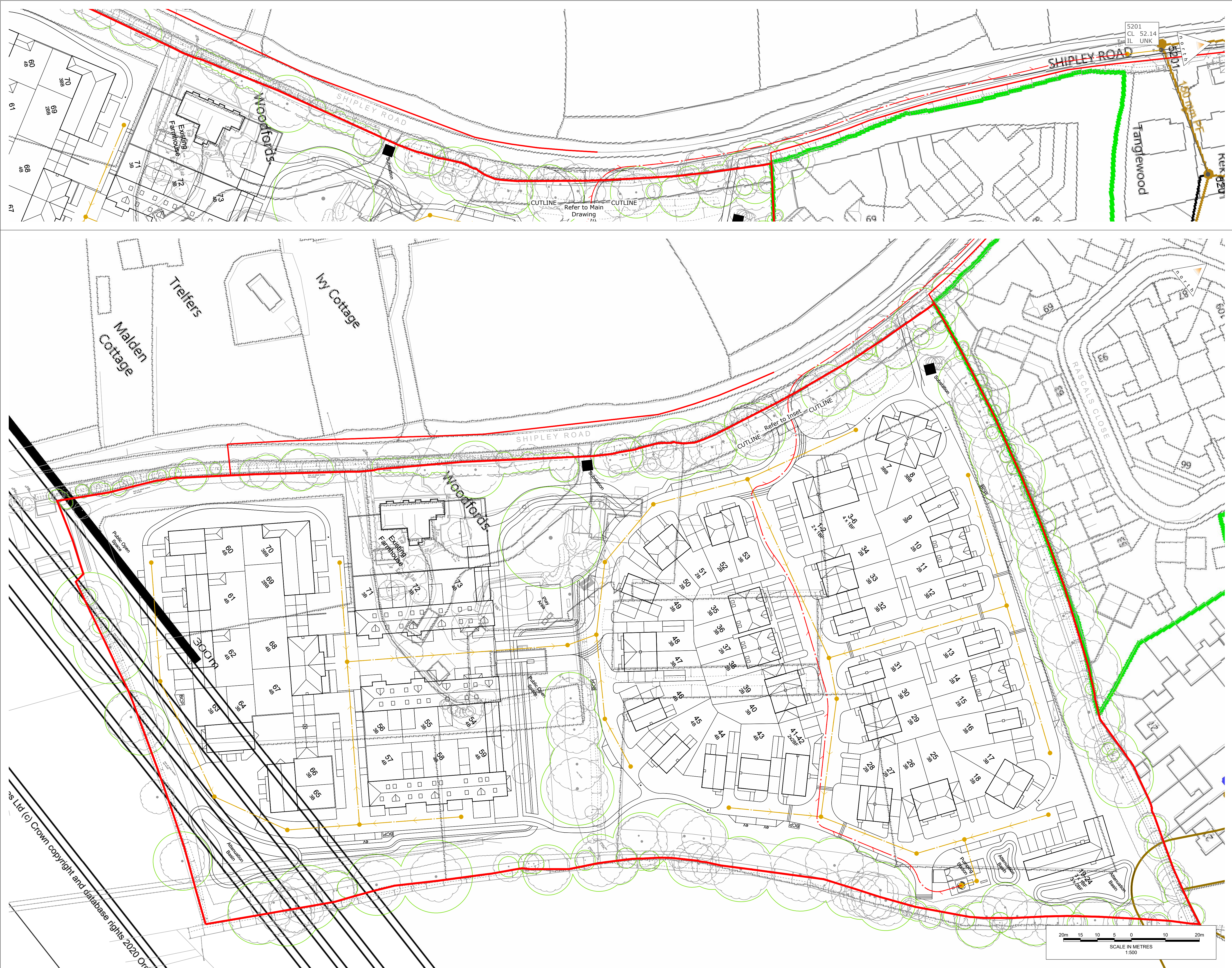
Cancel

Help

Enter Area between 0.000 and 999.999

Appendix K

Drainage Strategy



Legend

- Proposed Foul Sewer
- Proposed Foul Manhole / Inspection Chamber
- Proposed Foul Rising Main
- Existing Southern Water Foul Sewer

B	Site layout updated	MH	PA	N3	13/09/2021
A	First Issue	MH	VH	N3	27/11/2020
Revision Notes:		Dm	Chk	App	Date

Drawing Status: **DRAFT**
NOT FOR CONSTRUCTION

motion

84 North Street
Guildford
Surrey
GU1 4AU
01483 531300

9 Greyfriars Road
Reading
Berkshire
RG1 1NU
0118 206 2930

Golden Cross House
8 Duncannon Street
London
WC2N 4JF
020 7031 8141

www.motion.co.uk

Client: **reside.**

Project: Land East of Shipley Road, Southwater
Title: Outline Foul Drainage Strategy

Scale: 1:500	Size: A1	Project No: 2007068	Revision: B
Drawing: 2007068-0500-03			

C:\Users\Matthew\Documents\Infrastructure\London\2007068\Drawings\2007068-0500-03 [Drainage Strategy].dwg

Appendix L

Exceedance Plan



Legend

Exceedance Direction

Exceedance Area

Route

Flow

Storage

C	Site layout updated	MH	PA	N3	10/09/2021
B	Site layout updated	MH	VH	N3	27/11/2020
A	First Issue	MH	VH	N3	20/11/2020
Revision Notes:		Drm	Chk	App	Date

Drawing Status: **DRAFT**
NOT FOR CONSTRUCTION

84 North Street
Guildford
Surrey
GU1 4AU

9 Greyfriars Road
Reading
Berkshire
RG1 1NU

Golden Cross House
8 Duncannon Street
London
WC2N 4JF

01483 531300

0118 206 2930

020 7031 8141

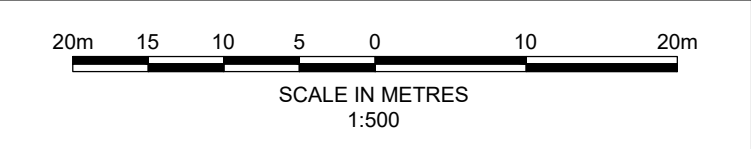
www.motion.co.uk

Client:

Project:
Land East of Shipley Road, Southwater

Title:
Outline Drainage Strategy
Exceedance Plan

Scale: 1:500	Size: A1	Project No: 2007068	Revision:
Drawing: 2007068-0500-02			C



C:\Users\Matthew\Documents\Infrastructure\Drawings\2007068-0500-02 [Exceedance Plan].dwg

Appendix E

Eleanor Read

Flood Risk Management Officer
Highways, Transport and Planning,
Place Services

Eleanor.Read@westsussex.gov.uk

www.westsussex.gov.uk

Ground Floor
Northleigh
County Hall
Chichester
PO19 1RH
03302 227048



Dominic Cronin
The Hallmark Building
52-56 Leadenhall Street
London
EC3 5JE

25th April 2025

Dear Dominic,

WSSC-671906145 – Shipley Road, Horsham, RH13 9BQ

WSSC Flood Risk Management Team Level 2 Pre-Application Advice has been sought for a 1.83ha site in Southwater, Horsham District. The application will be reserved matters for 73 dwellings, with associated hard landscaping, access road and SuDS attenuation.

Following a meeting on 4th April 2025, we have the following comments to make:

1. We discussed the history of the site drainage wise, as well as changes to NPPF/PPG Flood risk and coastal change and calculation parameters which will need to be considered as part of this application.
2. In terms of the calculations discussion that occurred during the meeting, for this application, we'd support using a Cv value of 1 with reduced freeboard. Due to the reduced freeboard in the basins as a result of this, the exceedance plan must show flow directions from the basin, to ensure flood risk will not increase elsewhere or affect any vulnerable aspects of the site.
3. We can confirm that if Qbar is not viable when using Cv value 1, restricting to flow matching rates is acceptable. However, it is our preference that is single rate discharge is used. Long term storage should be included in the scenario where flow matching is used.
4. The watercourse within the site and the drain along the northern boundary will need a 3m easement from the top of both banks for maintenance purposes. It would be helpful if the watercourse and it's connection to the wider network is provided.
5. If proposing to connect to the ditch outside the red line boundary, we'll need third party agreement to this.
6. As discussed, construction drawings of the outfall should be provided, so we can let the applicant know whether an ordinary Watercourse Consent will be required.

7. The foul pumping station is in close proximity to the basin. This will need to be considered from both an adoption and surface water quality perspective.
8. When preparing the calculations, the following should be used as guidance (follow the full application type as they layout is being set as part of this reserved matters application): [Surface Water Drainage Proforma](#)

Yours sincerely,

Ellie Read and Natalie Biddulph
Flood Risk Management Team

SENT BY EMAIL ONLY

Documents reviewed for this letter and the meeting:

Outline Drainage Strategy by Motion, 10/09/2021, revision D
Presentation Layout by DHA Architecture, 14/03/2025
Proposed Drainage Strategy by Ardent, 09/04/2025, revision F

Appendix F

Calculated by:	Dominic Cronin
Site name:	
Site location:	RH13 9BQ

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013) , the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Site Details

Latitude:	51.01323° N
Longitude:	0.35259° W
Reference:	3836860776
Date:	Jan 09 2025 16:04

Runoff estimation approach

IH124

Site characteristics

Total site area (ha):	1
-----------------------	---

Methodology

Q_{BAR} estimation method:	Calculate from SPR and SAAR
SPR estimation method:	Calculate from SOIL type

Notes

(1) Is $Q_{BAR} < 2.0$ l/s/ha?

When Q_{BAR} is < 2.0 l/s/ha then limiting discharge rates are set at 2.0 l/s/ha.

Soil characteristics

	Default	Edited
SOIL type:	4	4
HOST class:	N/A	N/A
SPR/SPRHOST:	0.47	0.47

(2) Are flow rates < 5.0 l/s?

Where flow rates are less than 5.0 l/s consent for discharge is usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.

Hydrological characteristics

	Default	Edited
SAAR (mm):	776	776
Hydrological region:	7	7
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 30 years:	2.3	2.3
Growth curve factor 100 years:	3.19	3.19
Growth curve factor 200 years:	3.74	3.74

(3) Is $SPR/SPRHOST \leq 0.3$?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.

Q_{BAR} (l/s):	5.45	5.45
1 in 1 year (l/s):	4.63	4.63
1 in 30 years (l/s):	12.53	12.53
1 in 100 year (l/s):	17.37	17.37
1 in 200 years (l/s):	20.37	20.37

This report was produced using the greenfield runoff tool developed by HR Wallingford and available at www.uksuds.com. The use of this tool is subject to the UK SuDS terms and conditions and licence agreement , which can both be found at www.uksuds.com/terms-and-conditions.htm. The outputs from this tool are estimates of greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, CEH, Hydrosolutions or any other organisation for the use of this data in the design or operational characteristics of any drainage scheme.

Appendix G

Surface Water Drainage Proforma

West Sussex County Council (WSCC) as Lead Local Flood Authority recommends this proforma is completed and submitted to support any planning application for a major development. The information contained in this form will be used by WSCC officers in their role as 'statutory consultee' on surface water drainage. The proforma should accompany the site-specific Flood Risk Assessment and Drainage Strategy submitted as part of the planning application.

1. Site Details

No.	Requirement	Answer	Application Type
1.1	Address including postcode	Shipley Road, Southwater, Horsham, RH13 9BQ	Outline & Full
1.2	OS grid reference (easting and northing)	515680, 125027	Outline & Full
1.3	Planning application reference	DC/21/2180	Outline & Full
1.4	Total site area (hectares)	3.7	Outline & Full
1.5	Pre-development use	Assumed for equestrian purposes	Outline & Full
1.6	Proposed design life	Yes	Outline & Full
1.7	Have agreements in principle for discharge been provided (where applicable)? (YES/NO)	Yes	
1.8	Topographic Survey Plan showing existing site layout, site levels and drainage system	YES	Outline & Full

2. Discharge Hierarchy/Methods of Discharge¹

No.	Requirement	Answer	Application Type
2.1	Store rainwater for later use (reuse) (YES/NO)	NO	Full
2.2	Infiltration techniques such as soakaways, permeable paving, etc (YES/NO)	NO	Outline & Full
2.3	Hybrid (YES/NO)	NO	Outline & Full

¹ Runoff may be discharged via one or multiple methods.

No.	Requirement	Answer	Application Type
2.4	Attenuation with restricted discharge to watercourse (YES/NO)	YES	Outline & Full
2.5	Attenuation with restricted discharge to surface water sewer (YES/NO)	NO	Outline & Full
2.6	Attenuation with restricted discharge to combined sewer (YES/NO)	NO	Outline & Full

3. Calculation Inputs

No.	Requirement	Answer	Application Type
3.1	Area within site which is drained by SuDS ² (hectares)	1.67 ha	Outline & Full
3.2	Impermeable area drained pre-development ³ (hectares)	0.16 ha	Outline & Full
3.3	Impermeable area drained post-development ³ (hectares)	1.67 ha	Outline & Full
3.4	Urban Creep (hectares)	0.08 ha	Outline & Full
3.5	Climate change factor applied (1 in 30 and 1 in 100) (percentage)	40% for 1 in 30 and 45% for 1 in 100	Outline & Full

4. Infiltration Feasibility/Ground Investigations

No.	Requirement	Answer	Application Type
4.1	Has winter groundwater monitoring and infiltration been undertaken? (YES/NO)	Groundwater monitoring was encountered but no infiltration tests were taken.	Outline & Full
4.2	Period of winter groundwater monitoring (from/to)	SI states "towards the end of a particularly dry winter"	Outline & Full
4.3	Depth to highest recorded groundwater level (mAOD)	SI states "No groundwater was encountered"	Full
4.4	Infiltration rate	No infiltration tests were taken	Outline & Full

² Impermeable area should be measured pre and post development. Impermeable surfaces include roofs, pavements, driveways and paths, where runoff is conveyed to the drainage system.

³ 10% Urban Creep should be added to the volumes required for storage and not increase discharge rates.

No.	Requirement	Answer	Application Type
4.5	Depth of infiltration structure (mAOD)	N/A	Full
4.6	Safety factor used for sizing infiltration storage	N/A	Outline & Full

5. Calculation Outputs: Greenfield Runoff Rates⁴

No.	Requirement	Answer	Application Type
5.1	Qbar (l/s)	7.70	Outline & Full
5.2	1 in 2 year rainfall (l/s)	6.70	Outline & Full
5.3	1 in 30 year rainfall (l/s)	18.40	Outline & Full
5.4	1 in 100 year rainfall (l/s)	24.40	Outline & Full

6. Calculation Outputs: Brownfield Runoff Rates (including Urban Creep) (if applicable)

No.	Requirement	Answer	Application Type
6.1	1 in 1 year rainfall (l/s)	N/A	Outline & Full
6.2	1 in 30 year rainfall (l/s)	N/A	Outline & Full
6.3	1 in 100 year rainfall (l/s)	N/A	Outline & Full

7. Calculation Outputs: Volume Control/Infiltration Provision

No.	Requirement	Answer	Application Type
7.1	Infiltration (m ³)		Outline & Full
7.2	Attenuation (m ³)	1,613m ³	Outline & Full
7.3	Separate volume designated as long-term storage ⁵ (m ³)	None, as discharging at QBar	Full
7.4	Total volume control (sum of inputs for 7.1 to 7.3) (m ³)	0m ³	Full

⁴ Flows within long term storage areas should be infiltrated to the ground or discharged at low flow rate of maximum 2 litres per second per hectare (l/s/ha).

⁵ In calculations and for the avoidance of doubt FEH shall be used FSR is not acceptable, and CV values must equal 1.

8. Calculation Outputs: Attenuation/Restricted Discharge

No.	Requirement		Answer	Application Type
8.1	Proposed discharge rate (critical storm)	1 in 1 (100%) AEP (m/s)	Catchment A: 13.40 l/s Catchment B: 8.2 l/s	Outline & Full
		1 in 30 (3.33%) AEP (m/s)	Catchment A: 13.40 l/s Catchment B: 8.2 l/s	Outline & Full
		1 in 30 (3.33%) AEP plus climate change (m/s)	Catchment A: 13.40 l/s Catchment B: 8.2 l/s	Outline & Full
		1 in 100 (1%) AEP (m/s)	Catchment A: 13.40 l/s Catchment B: 8.2 l/s	Outline & Full
		1 in 100 (1%) AEP plus climate change (m/s)	Catchment A: 13.40 l/s Catchment B: 8.2 l/s	Outline & Full
8.2	Calculations show critical storm durations (both by max height and max discharge) for 1 in 1, 1 in 30, 1 in 30 plus climate change, 1 in 100 and 1 in 100 year plus climate change allowance can be accommodated on site (YES/NO)		Yes	Outline & Full
8.3	Has treatment of potential contaminants been considered? (YES/NO)		Yes	Outline & Full
8.4	Demonstration of source control features with substantive evidence why these cannot be used if not (YES/NO)		Yes	Full
8.5	If discharging into a watercourse, piped system or the sea, has the proposed drainage network been modelled against predicted top water levels for the 1 in 100 year storm event plus climate change allowance, within the existing system? (YES/NO)		No	Full

9. Other Supporting Details

No.	Requirement	Answer	Application Type
9.1	Plan detailing location of groundwater monitoring and infiltration testing	Groundwater monitoring - yes Infiltration testing - no	Outline & Full
9.2	Detailed drainage design layout	Yes	Full
9.3	Maintenance strategy	Yes	Full

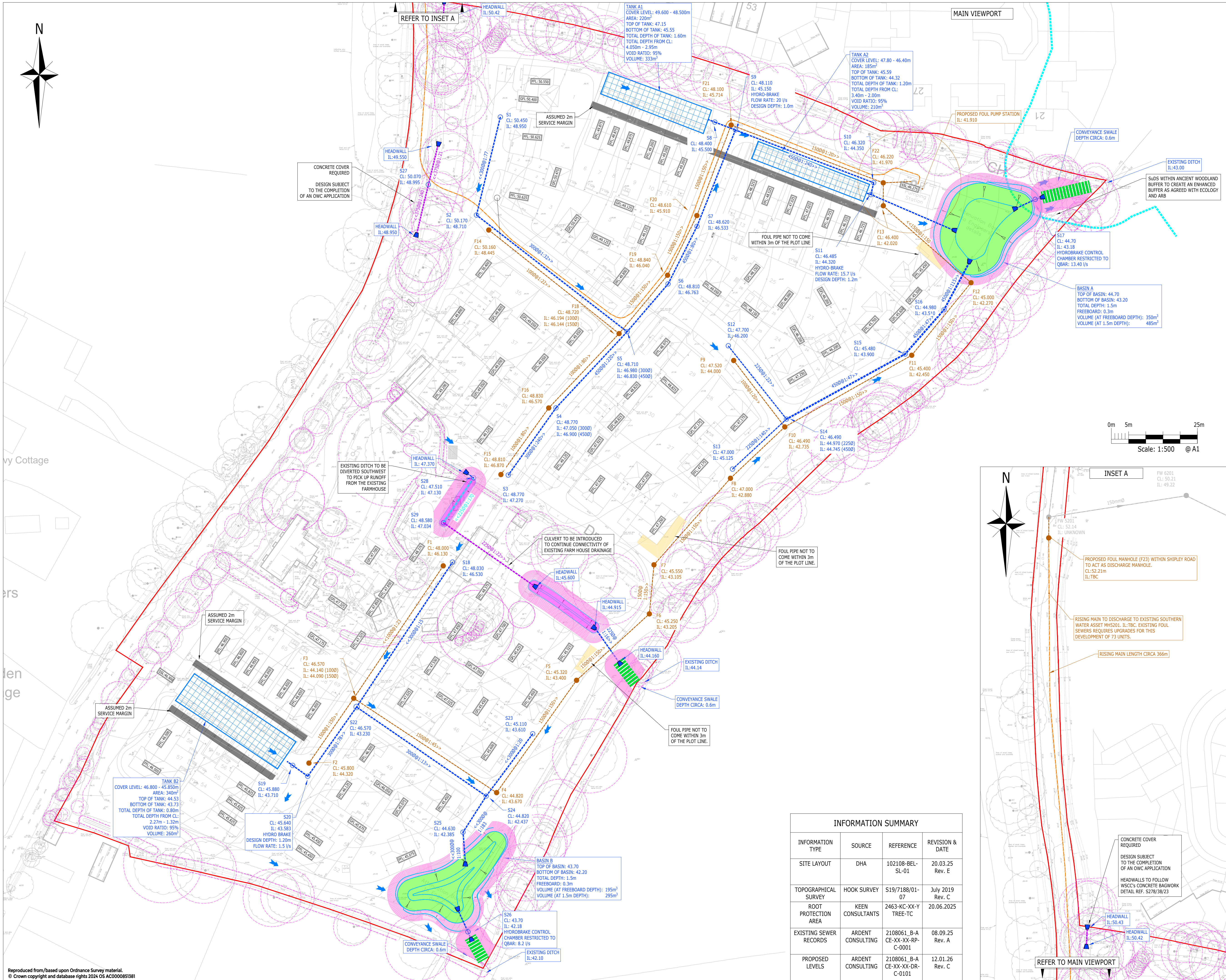
No.	Requirement	Answer	Application Type
9.4	Detailed development layout	Yes	Full
9.5	Impermeable area plan	No	Full
9.6	Phasing plan?	No	Full
9.7	If ground levels are being raised over 300mm above existing levels and is unavoidable, have detailed plans been provided, together with drainage proposals, to address any potential drainage related issues?	Yes	Full

The above form should be completed using evidence from information which should be appended to this form. The information being submitted should be proportionate to the site conditions, flood risks and magnitude of development. It should serve as a summary of the drainage proposals and should clearly show that the proposed discharge rate and volume as a result of development will not be increasing. Where there is an increase in discharge rate or volume, then the relevant section of this form must be completed with clear evidence demonstrating how the requirements will be met.

This form is completed using factual information and can be used as a summary of the surface water drainage strategy on this site.

Form completed by	Dominic Cronin
Qualification of person responsible for signing off this proforma	BEng Civil Engineering
Company	Ardent Consulting
On behalf of (client's details)	Bellway
Date	08/09/25

Appendix H



Appendix I

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	100	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	1.000
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	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)
S1	0.070	5.00	50.450	1350	515626.315	125104.126	1.500
S2	0.111	5.00	50.170	1350	515618.522	125077.897	1.460
S3	0.106	5.00	48.770	1350	515627.402	125000.812	1.500
S4	0.045	5.00	48.770	1350	515640.427	125020.501	1.870
S5	0.068	5.00	48.710	1200	515663.195	125041.779	1.880
S6	0.049	5.00	48.810	1350	515675.114	125055.676	2.047
S7	0.058	5.00	48.620	1200	515683.977	125072.127	2.087
S9	0.023	5.00	48.110	2100	515695.652	125101.989	2.960
TANK A1	0.079	5.00	48.500	1350	515655.236	125116.897	2.950
S10	0.100	5.00	46.320	1800	515732.271	125088.721	1.970
S12	0.026	5.00	47.700	1350	515692.636	125037.623	1.500
S13	0.107	5.00	47.100	1350	515693.856	125001.792	1.975
S14	0.069	5.00	46.490	1350	515709.334	125017.085	1.745
S15	0.049	5.00	45.470	1350	515744.128	125034.383	1.570
S16			45.050	1350	515755.884	125048.873	1.540
HW			44.700	1350	515764.130	125062.791	1.430
BASIN A			44.700	1350	515776.648	125077.741	1.500
S17			44.700	1500	515784.998	125080.923	1.520
OUTFALL			43.812	1200	515791.201	125082.675	0.712
TANK A2		5.00	46.490	1350	515726.061	125072.634	2.100

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	S1	S2	18.537	0.600	48.950	48.710	0.240	77.2	300	5.17	50.0
1.002	S2	S5	55.350	0.600	48.710	46.980	1.730	32.0	300	5.50	50.0
2.000	S3	S4	23.608	0.600	47.270	47.050	0.220	107.3	300	5.26	50.0
2.001	S4	S5	17.792	0.600	46.900	46.830	0.070	254.2	450	5.49	50.0
1.003	S5	S6	14.705	0.600	46.830	46.763	0.067	219.5	450	5.68	50.0
3.000	TANK A1	S9	43.078	0.600	45.550	45.150	0.400	107.7	450	5.37	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)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	1.790	126.6	12.6	1.200	1.160	0.070	0.0	64	1.156
1.002	2.789	197.1	32.7	1.160	1.430	0.181	0.0	82	2.085
2.000	1.517	107.2	19.2	1.200	1.420	0.106	0.0	85	1.154
2.001	1.270	202.0	27.3	1.420	1.430	0.151	0.0	111	0.898
1.003	1.368	217.6	72.3	1.430	1.597	0.400	0.0	178	1.234
3.000	1.958	311.5	14.3	2.500	2.510	0.079	0.0	65	1.011

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)
4.000	S9	S10	38.949	0.600	45.150	44.350	0.800	48.7	450	6.19	50.0
3.001	S7	S9	32.063	0.600	46.533	45.150	1.383	23.2	450	5.96	50.0
3.002	S6	S7	20.295	0.600	46.763	46.533	0.230	88.2	450	5.84	50.0
4.000_A	TANK A2	S10	17.244	0.600	44.390	44.350	0.040	431.1	450	5.30	50.0
1.005	S12	S14	26.470	0.600	46.200	44.970	1.230	21.5	225	5.16	50.0
5.000	S13	S14	21.759	0.600	45.125	44.970	0.155	140.4	225	5.33	50.0
1.006	S14	S15	38.856	0.600	44.745	43.900	0.845	46.0	450	5.54	50.0
1.007	S15	S16	18.659	0.600	43.900	43.510	0.390	47.8	450	5.65	50.0
1.008	S16	HW	16.177	0.600	43.510	43.270	0.240	67.4	450	5.76	50.0
1.009	HW	BASIN A	19.499	0.600	43.270	43.200	0.070	278.6	450	6.03	50.0
1.010	BASIN A	S17	8.936	0.600	43.200	43.180	0.020	446.8	450	6.58	50.0
1.011	S17	OUTFALL	6.445	0.600	43.180	43.100	0.080	80.6	225	6.65	50.0
1.007_A	S10	BASIN A	45.715	0.600	44.350	43.200	1.150	39.8	450	6.42	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)	Pro Depth (mm)	Pro Velocity (m/s)
4.000	2.919	464.2	110.0	2.510	1.520	0.609	0.0	148	2.407
3.001	4.236	673.7	91.6	1.637	2.510	0.507	0.0	111	3.002
3.002	2.165	344.3	81.1	1.597	1.637	0.449	0.0	148	1.785
4.000_A	0.973	154.7	0.0	1.650	1.520	0.000	0.0	0	0.000
1.005	2.833	112.6	4.7	1.275	1.295	0.026	0.0	31	1.414
5.000	1.101	43.8	19.3	1.750	1.295	0.107	0.0	105	1.070
1.006	3.004	477.7	36.5	1.295	1.120	0.202	0.0	83	1.804
1.007	2.945	468.3	45.4	1.120	1.090	0.251	0.0	94	1.894
1.008	2.479	394.2	45.4	1.090	0.980	0.251	0.0	102	1.677
1.009	1.213	192.9	45.4	0.980	1.050	0.251	0.0	148	0.999
1.010	0.955	151.9	173.5	1.050	1.070	0.960	0.0	450	0.967
1.011	1.458	58.0	173.5	1.295	0.487	0.960	0.0	225	1.485
1.007_A	3.232	514.0	128.1	1.520	1.050	0.709	0.0	152	2.705

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 (m³/ha)	0.0	

Storm Durations

15	60	180	360	600	960	2160	4320	7200	10080
30	120	240	480	720	1440	2880	5760	8640	

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	5	0
30	0	5	0
30	40	5	0
100	0	5	0
100	45	5	0

Results for 1 year +5% A Critical Storm Duration. Lowest mass balance: 99.06%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S1	10	49.004	0.054	9.0	0.0768	0.0000	OK
15 minute summer	S2	10	48.779	0.069	23.2	0.0993	0.0000	OK
15 minute summer	S3	10	47.344	0.074	13.6	0.1055	0.0000	OK
15 minute summer	S4	10	46.997	0.097	19.2	0.1389	0.0000	OK
15 minute summer	S5	11	46.984	0.154	50.2	0.1745	0.0000	OK
15 minute summer	S6	11	46.897	0.134	56.4	0.1911	0.0000	OK
15 minute summer	S7	11	46.625	0.092	63.8	0.1044	0.0000	OK
15 minute summer	S9	12	45.714	0.564	66.7	1.9531	0.0000	SURCHARGED
120 minute summer	TANK A1	76	45.619	0.069	21.4	14.5249	0.0000	OK
240 minute summer	S10	160	44.626	0.276	24.9	0.7023	0.0000	OK
15 minute summer	S12	10	46.227	0.027	3.3	0.0380	0.0000	OK
15 minute summer	S13	10	45.214	0.089	13.7	0.1273	0.0000	OK
15 minute summer	S14	10	44.815	0.070	25.6	0.0998	0.0000	OK
15 minute summer	S15	10	43.981	0.081	31.7	0.1158	0.0000	OK
15 minute summer	S16	11	43.598	0.088	31.5	0.1256	0.0000	OK
360 minute summer	HW	264	43.501	0.231	9.6	0.3306	0.0000	OK
360 minute summer	BASIN A	264	43.501	0.301	21.9	61.7321	0.0000	OK
360 minute summer	S17	264	43.501	0.321	12.9	0.5665	0.0000	SURCHARGED
360 minute summer	OUTFALL	264	43.172	0.072	12.9	0.0000	0.0000	OK
240 minute summer	TANK A2	160	44.626	0.236	13.5	41.8929	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	S1	1.000	S2	8.9	0.862	0.071	0.1930	
15 minute summer	S2	1.002	S5	22.7	1.867	0.115	0.6723	
15 minute summer	S3	2.000	S4	13.4	1.026	0.125	0.3082	
15 minute summer	S4	2.001	S5	18.9	0.524	0.094	0.6502	
15 minute summer	S5	1.003	S6	50.4	1.154	0.231	0.6425	
15 minute summer	S6	3.002	S7	56.7	1.823	0.165	0.6362	
15 minute summer	S7	3.001	S9	63.9	1.107	0.095	2.9146	
15 minute summer	S9	4.000	S10	20.0	0.706	0.043	2.0847	
120 minute summer	TANK A1	3.000	S9	-15.9	-0.184	-0.051	3.7439	
240 minute summer	S10	1.007_A	BASIN A	15.1	1.143	0.029	2.6305	
15 minute summer	S12	1.005	S14	3.3	1.253	0.029	0.0689	
15 minute summer	S13	5.000	S14	13.5	0.954	0.308	0.3078	
15 minute summer	S14	1.006	S15	25.4	1.461	0.053	0.6773	
15 minute summer	S15	1.007	S16	31.5	1.541	0.067	0.3821	
15 minute summer	S16	1.008	HW	31.7	1.079	0.081	0.5342	
360 minute summer	HW	1.009	BASIN A	9.2	0.566	0.048	1.8972	
360 minute summer	BASIN A	1.010	S17	12.9	0.152	0.085	1.0432	
360 minute summer	S17	1.011	OUTFALL	12.9	1.105	0.222	0.0750	199.7
240 minute summer	TANK A2	4.000_A	S10	-13.5	-0.325	-0.088	1.6060	