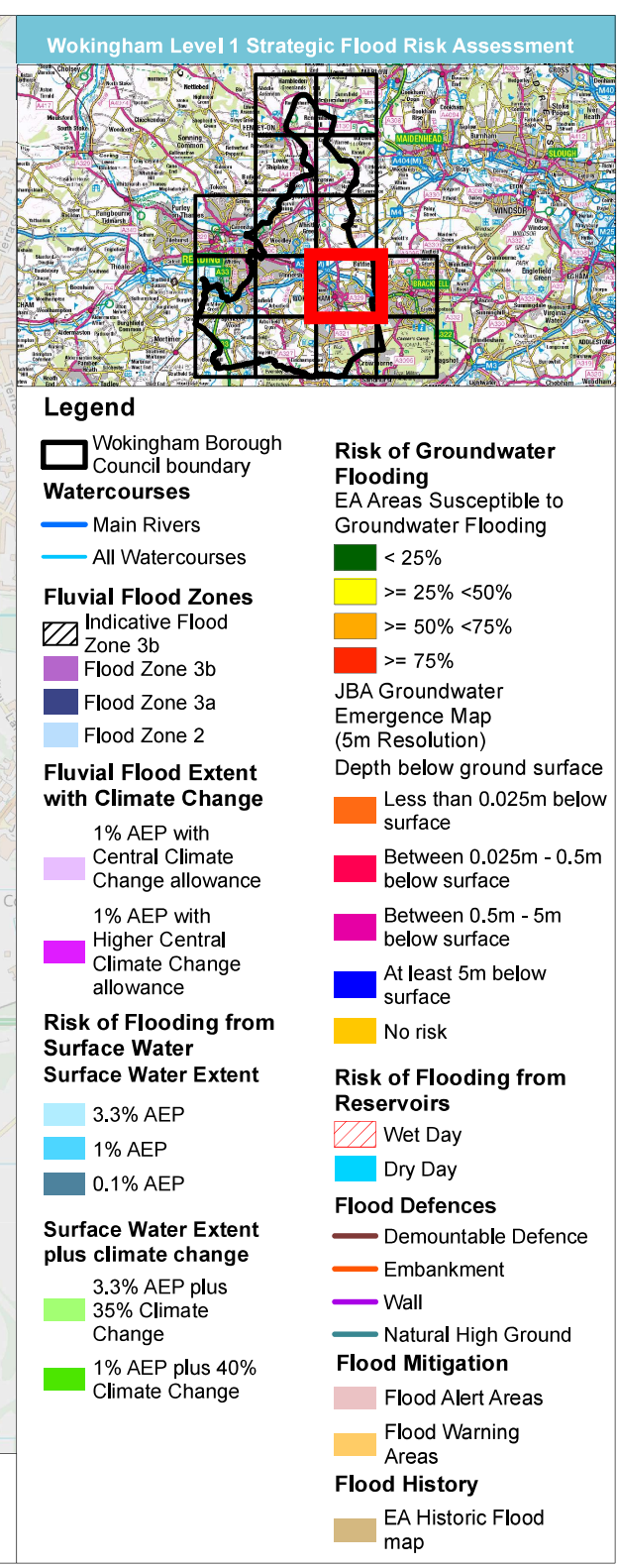
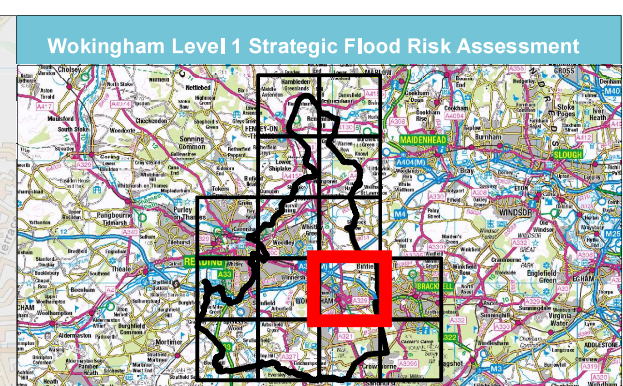






 Wokingham Borough
Council boundary

- Main Rivers
— All Watercourses

 Indicative Flood
 Flood Zone 3b
 Flood Zone 3a
 Flood Zone 2

Fluvial Flood Extent with Climate Change

- 1% AEP with
Central Climate
Change allowance
- 1% AEP with
Higher Central
Climate Change
allowance

Risk of Flooding from Surface Water

Surface Water Extent

- 3.3% AEP
1% AEP
0.1% AEP

Surface Water Extent plus climate change

- 3.3% AEP plus
35% Climate
Change
- 1% AEP plus 40%
Climate Change

Risk of Groundwater Flooding

EA Areas Susceptible to Groundwater Flooding

-  < 25%
 >= 25% < 50%
 >= 50% < 75%
 >= 75%

JBA Groundwater
Emergence Map
(5m Resolution)

- Depth below ground surface
- Less than 0.025m below surface
 - Between 0.025m - 0.5m below surface
 - Between 0.5m - 5m below surface
 - At least 5m below surface
 - No risk

Risk of Flooding from Reservoirs

-  Wet Day
 Dry Day

Flood Defences

- Demountable Defence
— Embankment
— Wall
— Natural High Ground

Flood Mitigation

-  Flood Alert Areas
-  Flood Warning Areas

Flood History

- EA Historic Flood map

Appendix E

Drainage Strategy Drawing



KEY:

- PROPOSED SURFACE WATER
- EXISTING SURFACE WATER
- PROPOSED FOUL WATER
- EXISTING FOUL WATER
- FOUL WATER RISING MAIN
- TREE RPA
- POROUS PAVING
- CRATE ATTENUATION
- POROUS FORMATION LEVEL

SURFACE WATER DRAINAGE CATCHMENT 1 (WEST)
IMPERMEABLE AREA = 0.570ha
GREENFIELD RATE = 4.1l/s/ha (1yr)
DISCHARGE RATE = 2.3l/s

SURFACE WATER DRAINAGE CATCHMENT 2 (EAST)
IMPERMEABLE AREA = 0.242ha
GREENFIELD RATE = 4.1l/s/ha (1yr)
DISCHARGE RATE = 1.0l/s

B	UPDATED TO LATEST LAYOUT	MJP	JOK	11.06.25
A	UPDATED TO LATEST LAYOUT	JOK		02.06.25
Rev	Description	Drm	Chk	Date
REVISIONS				
Preliminary Issue	Submitted for S104			
Planning Issue	Issued for Tender			
Submitted for S38	Issued for Construction			
Submitted for S278	As Built			
DRAWING STATUS				

STUART MICHAEL ASSOCIATES
CONSULTING ENGINEERS

Stuart Michael Associates Ltd
Coombe House, Coombe Square, Thatcham, Berkshire RG19 4JF

T: 01635 867 711 e: mail@stuartmichael.co.uk
F: 01635 861 715 w: www.stuartmichael.co.uk

OLD FOREST ROAD WINNERSH

DRAINAGE LAYOUT

DATE	MAY 25	DRAWN	JOK	CHECKED	MAS
DRAWING No.	7365.400	REV	B	SCALE	1:500
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Appendix F

Surface Water Calculations

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	2	Connection Type	Level Soffits
Additional Flow (%)	0	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)
Porous 1A	0.072	5.00	49.800	1200	479444.161	170286.120	0.600
Porous 1B	0.027	5.00	49.450	1200	479433.398	170303.197	0.600
Porous 1C	0.021	5.00	49.100	1200	479459.271	170320.391	0.600
Porous 1D	0.063	5.00	48.800	1200	479484.916	170338.132	0.600
Porous 1E	0.069	5.00	48.500	1200	479510.589	170353.270	0.600
Basin			48.500	1200	479540.777	170362.581	0.750
S1			48.500	1200	479543.835	170366.109	0.775
Outfall 1			48.100	1200	479550.093	170367.610	0.400
Porous 2A	0.051	5.00	50.800	1200	479398.659	170225.546	0.450
Crates 2B	0.063	5.00	50.600	1200	479405.836	170228.497	1.290
Porous 2C	0.042	5.00	50.100	1200	479426.576	170250.349	0.900
Porous 2D	0.167	5.00	50.950	1200	479328.297	170234.768	1.050
Porous 2E	0.034	5.00	50.750	1200	479342.403	170249.244	0.900
Porous 2F	0.048	5.00	50.500	1200	479357.632	170264.815	0.900
Porous 2G	0.056	5.00	50.150	1200	479391.388	170284.602	0.900
Porous 2H	0.012	5.00	50.000	1200	479404.157	170281.701	0.900
Porous 2I	0.104	5.00	49.750	1200	479429.397	170278.171	1.150
S2			49.750	1200	479431.040	170279.526	1.200
Outfall 2			49.730	1200	479432.683	170280.880	1.290

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	Basin	S1	4.669	0.600	47.750	47.725	0.025	186.8	300	9.36	38.7
1.006	S1	Outfall 1	6.435	0.600	47.725	47.700	0.025	257.4	300	9.47	38.5
2.005	Porous 2I	S2	2.130	0.600	48.600	48.550	0.050	42.6	225	8.50	40.8
2.006	S2	Outfall 2	2.129	0.600	48.550	48.440	0.110	19.4	150	8.52	40.7
1.000	Porous 1A	Porous 1B	20.186	0.600	49.200	48.850	0.350	57.7	50	5.53	50.0
1.001	Porous 1B	Porous 1C	31.065	0.600	48.850	48.500	0.350	88.8	50	6.54	46.6

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	1.147	81.1	35.2	0.450	0.475	0.252	0.0
1.006	0.975	68.9	35.0	0.475	0.100	0.252	0.0
2.005	2.010	79.9	85.0	0.925	0.975	0.577	0.0
2.006	2.300	40.6	84.9	1.050	1.140	0.577	0.0
1.000	0.636	1.2	13.0	0.550	0.550	0.072	0.0
1.001	0.511	1.0	16.7	0.550	0.550	0.099	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)
1.002	Porous 1C	Porous 1D	31.183	0.600	48.500	48.200	0.300	103.9	50	7.65	43.1
1.003	Porous 1D	Porous 1E	29.804	0.600	48.200	47.900	0.300	99.3	100	8.29	41.3
1.004	Porous 1E	Basin	31.591	0.600	47.900	47.750	0.150	210.6	100	9.29	38.8
3.000	Porous 2A	Crates 2B	7.760	0.600	50.350	49.310	1.040	7.5	50	5.07	50.0
3.001	Crates 2B	Porous 2C	30.127	0.600	49.310	49.200	0.110	273.9	100	6.16	47.9
3.002	Porous 2C	Porous 2I	27.965	0.600	49.200	48.600	0.600	46.6	50	6.82	45.6
2.000	Porous 2D	Porous 2E	20.212	0.600	49.900	49.850	0.050	404.2	100	5.89	48.8
2.001	Porous 2E	Porous 2F	21.780	0.600	49.850	49.600	0.250	87.1	50	6.60	46.4
2.002	Porous 2F	Porous 2G	39.128	0.600	49.600	49.250	0.350	111.8	75	7.69	43.0
2.003	Porous 2G	Porous 2H	13.094	0.600	49.250	49.100	0.150	87.3	75	8.01	42.0
2.004	Porous 2H	Porous 2I	25.486	0.600	49.100	48.600	0.500	51.0	75	8.49	40.8

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	0.471	0.9	18.7	0.550	0.550	0.120	0.0
1.003	0.771	6.1	27.3	0.500	0.500	0.183	0.0
1.004	0.526	4.1	35.4	0.500	0.650	0.252	0.0
3.000	1.791	3.5	9.2	0.400	1.240	0.051	0.0
3.001	0.460	3.6	19.7	1.190	0.800	0.114	0.0
3.002	0.709	1.4	25.7	0.850	1.100	0.156	0.0
2.000	0.376	3.0	29.5	0.950	0.800	0.167	0.0
2.001	0.516	1.0	33.7	0.850	0.850	0.201	0.0
2.002	0.599	2.6	38.7	0.825	0.825	0.249	0.0
2.003	0.679	3.0	46.3	0.825	0.825	0.305	0.0
2.004	0.893	3.9	46.7	0.825	1.075	0.317	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)
1.005	4.669	186.8	300	Circular	48.500	47.750	0.450	48.500	47.725	0.475
1.006	6.435	257.4	300	Circular	48.500	47.725	0.475	48.100	47.700	0.100
2.005	2.130	42.6	225	Circular	49.750	48.600	0.925	49.750	48.550	0.975
2.006	2.129	19.4	150	Circular	49.750	48.550	1.050	49.730	48.440	1.140
1.000	20.186	57.7	50	Circular	49.800	49.200	0.550	49.450	48.850	0.550
1.001	31.065	88.8	50	Circular	49.450	48.850	0.550	49.100	48.500	0.550
1.002	31.183	103.9	50	Circular	49.100	48.500	0.550	48.800	48.200	0.550
1.003	29.804	99.3	100	Circular	48.800	48.200	0.500	48.500	47.900	0.500
1.004	31.591	210.6	100	Circular	48.500	47.900	0.500	48.500	47.750	0.650

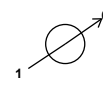
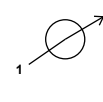
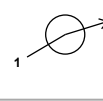
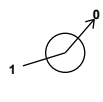
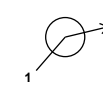
Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.005	Basin	1200	Manhole	Adoptable	S1	1200	Manhole	Adoptable
1.006	S1	1200	Manhole	Adoptable	Outfall 1	1200	Manhole	Adoptable
2.005	Porous 2I	1200	Manhole	Adoptable	S2	1200	Manhole	Adoptable
2.006	S2	1200	Manhole	Adoptable	Outfall 2	1200	Manhole	Adoptable
1.000	Porous 1A	1200	Manhole	Adoptable	Porous 1B	1200	Manhole	Adoptable
1.001	Porous 1B	1200	Manhole	Adoptable	Porous 1C	1200	Manhole	Adoptable
1.002	Porous 1C	1200	Manhole	Adoptable	Porous 1D	1200	Manhole	Adoptable
1.003	Porous 1D	1200	Manhole	Adoptable	Porous 1E	1200	Manhole	Adoptable
1.004	Porous 1E	1200	Manhole	Adoptable	Basin	1200	Manhole	Adoptable

Pipeline Schedule

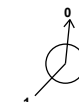
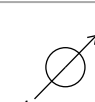
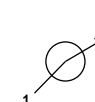
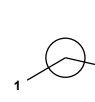
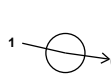
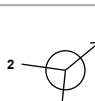
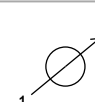
Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
3.000	7.760	7.5	50	Circular	50.800	50.350	0.400	50.600	49.310	1.240
3.001	30.127	273.9	100	Circular	50.600	49.310	1.190	50.100	49.200	0.800
3.002	27.965	46.6	50	Circular	50.100	49.200	0.850	49.750	48.600	1.100
2.000	20.212	404.2	100	Circular	50.950	49.900	0.950	50.750	49.850	0.800
2.001	21.780	87.1	50	Circular	50.750	49.850	0.850	50.500	49.600	0.850
2.002	39.128	111.8	75	Circular	50.500	49.600	0.825	50.150	49.250	0.825
2.003	13.094	87.3	75	Circular	50.150	49.250	0.825	50.000	49.100	0.825
2.004	25.486	51.0	75	Circular	50.000	49.100	0.825	49.750	48.600	1.075

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
3.000	Porous 2A	1200	Manhole	Adoptable	Crates 2B	1200	Manhole	Adoptable
3.001	Crates 2B	1200	Manhole	Adoptable	Porous 2C	1200	Manhole	Adoptable
3.002	Porous 2C	1200	Manhole	Adoptable	Porous 2I	1200	Manhole	Adoptable
2.000	Porous 2D	1200	Manhole	Adoptable	Porous 2E	1200	Manhole	Adoptable
2.001	Porous 2E	1200	Manhole	Adoptable	Porous 2F	1200	Manhole	Adoptable
2.002	Porous 2F	1200	Manhole	Adoptable	Porous 2G	1200	Manhole	Adoptable
2.003	Porous 2G	1200	Manhole	Adoptable	Porous 2H	1200	Manhole	Adoptable
2.004	Porous 2H	1200	Manhole	Adoptable	Porous 2I	1200	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
Porous 1A	479444.161	170286.120	49.800	0.600	1200		0	1.000	49.200	50
Porous 1B	479433.398	170303.197	49.450	0.600	1200		1	1.000	48.850	50
						0	1.001	48.850	50	
Porous 1C	479459.271	170320.391	49.100	0.600	1200		1	1.001	48.500	50
						0	1.002	48.500	50	
Porous 1D	479484.916	170338.132	48.800	0.600	1200		1	1.002	48.200	50
						0	1.003	48.200	100	
Porous 1E	479510.589	170353.270	48.500	0.600	1200		1	1.003	47.900	100
						0	1.004	47.900	100	
Basin	479540.777	170362.581	48.500	0.750	1200		1	1.004	47.750	100
						0	1.005	47.750	300	
S1	479543.835	170366.109	48.500	0.775	1200		1	1.005	47.725	300
						0	1.006	47.725	300	

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
Outfall 1	479550.093	170367.610	48.100	0.400	1200	 1	1.006	47.700	300
Porous 2A	479398.659	170225.546	50.800	0.450	1200	 0	3.000	50.350	50
Crates 2B	479405.836	170228.497	50.600	1.290	1200	 10	3.000	49.310	50
Porous 2C	479426.576	170250.349	50.100	0.900	1200	 01	3.001	49.310	100
Porous 2D	479328.297	170234.768	50.950	1.050	1200	 10	3.001	49.200	100
Porous 2E	479342.403	170249.244	50.750	0.900	1200	 01	2.000	49.900	100
Porous 2F	479357.632	170264.815	50.500	0.900	1200	 10	2.000	49.850	100
Porous 2G	479391.388	170284.602	50.150	0.900	1200	 01	2.001	49.850	50
Porous 2H	479404.157	170281.701	50.000	0.900	1200	 10	2.001	49.600	50
Porous 2I	479429.397	170278.171	49.750	1.150	1200	 01	2.002	49.600	75
S2	479431.040	170279.526	49.750	1.200	1200	 12	2.002	49.250	75
Outfall 2	479432.683	170280.880	49.730	1.290	1200	 1	2.003	49.250	75
						10	2.003	49.100	75
						01	2.004	49.100	75
						12	2.004	48.600	50
						21	2.004	48.600	75
						01	2.005	48.600	225
						1	2.005	48.550	225
						0	2.006	48.550	150
						1	2.006	48.440	150

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Additional Storage (m³/ha)	0.0
Summer CV	1.000	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	1.000	Drain Down Time (mins)	240	Check Discharge Volume	x

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 %)
100	40	0	0

Node S1 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	47.725	Product Number	CTL-SHE-0050-1000-0750-1000
Design Depth (m)	0.750	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	1.0	Min Node Diameter (mm)	1200

Node S2 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	48.550	Product Number	CTL-SHE-0069-2300-1200-2300
Design Depth (m)	1.200	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	2.3	Min Node Diameter (mm)	1200

Node Porous 2D Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	49.900	Product Number	CTL-SHE-0038-7000-1050-7000
Design Depth (m)	1.050	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	0.7	Min Node Diameter (mm)	1200

Node Crates 2B Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	49.310	Product Number	CTL-SHE-0044-1000-1250-1000
Design Depth (m)	1.250	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	1.0	Min Node Diameter (mm)	1200

Node Porous 1A Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	49.200	Slope (1:X)	500.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	
Safety Factor	2.0	Width (m)	12.000	Inf Depth (m)	
Porosity	0.30	Length (m)	25.000		

Node Porous 1B Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	48.850	Slope (1:X)	500.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	
Safety Factor	2.0	Width (m)	5.000	Inf Depth (m)	
Porosity	0.30	Length (m)	20.000		

Node Porous 1C Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	48.500	Slope (1:X)	500.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	
Safety Factor	2.0	Width (m)	5.000	Inf Depth (m)	
Porosity	0.30	Length (m)	30.000		

Node Porous 1D Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	48.200	Slope (1:X)	500.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	107	Depth (m)	
Safety Factor	2.0	Width (m)	5.000	Inf Depth (m)	
Porosity	0.30	Length (m)	28.000		

Node Porous 1E Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	47.900	Slope (1:X)	500.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	
Safety Factor	2.0	Width (m)	12.000	Inf Depth (m)	
Porosity	0.30	Length (m)	28.000		

Node Porous 2A Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	50.350	Slope (1:X)	500.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	103	Depth (m)	
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	31.000		

Node Crates 2B Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	49.350
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	150.0	0.0	0.800	150.0	0.0	0.810	0.0	0.0

Node Porous 2C Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	49.200	Slope (1:X)	500.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	
Safety Factor	2.0	Width (m)	5.500	Inf Depth (m)	
Porosity	0.30	Length (m)	34.500		

Node Porous 2D Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	49.900	Slope (1:X)	500.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	
Safety Factor	2.0	Width (m)	12.000	Inf Depth (m)	
Porosity	0.30	Length (m)	45.000		

Node Porous 2E Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	49.850	Slope (1:X)	500.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	
Safety Factor	2.0	Width (m)	5.500	Inf Depth (m)	
Porosity	0.30	Length (m)	20.000		

Node Porous 2F Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	49.600	Slope (1:X)	500.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	
Safety Factor	2.0	Width (m)	6.550	Inf Depth (m)	
Porosity	0.30	Length (m)	20.000		

Node Porous 2G Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	49.250	Slope (1:X)	500.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	
Safety Factor	2.0	Width (m)	5.700	Inf Depth (m)	
Porosity	0.30	Length (m)	36.000		

Node Porous 2H Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	49.100	Slope (1:X)	500.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	
Safety Factor	2.0	Width (m)	7.500	Inf Depth (m)	
Porosity	0.30	Length (m)	11.000		

Node Basin Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	47.750
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
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Node Porous 2I Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	48.600	Slope (1:X)	500.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	
Safety Factor	2.0	Width (m)	7.800	Inf Depth (m)	
Porosity	0.30	Length (m)	32.000		

Node S2 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	48.720
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

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0.000	96.5	0.0	0.400	96.5	0.0	0.410	0.0	0.0

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	Porous 1A	236	49.777	0.577	11.3	50.3529	0.0000	FLOOD RISK
480 minute summer	Porous 1B	280	49.450	0.600	4.5	18.0806	7.0549	FLOOD
600 minute winter	Porous 1C	600	49.020	0.520	2.7	22.6395	0.0000	FLOOD RISK
60 minute summer	Porous 1D	46	48.781	0.581	38.9	23.8987	0.0000	FLOOD RISK
2880 minute winter	Porous 1E	2820	48.494	0.594	3.5	57.7499	0.0000	FLOOD RISK
2160 minute winter	Basin	2280	48.483	0.733	2.6	95.4308	0.0000	FLOOD RISK
2160 minute winter	S1	2280	48.483	0.758	1.0	0.8575	0.0000	FLOOD RISK
15 minute summer	Outfall 1	1	47.700	0.000	1.0	0.0000	0.0000	OK
60 minute winter	Porous 2A	59	50.620	0.270	22.4	22.5477	0.0000	FLOOD RISK
480 minute winter	Crates 2B	480	50.024	0.714	8.4	96.9105	0.0000	SURCHARGED
960 minute winter	Porous 2C	945	49.926	0.726	2.8	40.2097	0.0000	FLOOD RISK
720 minute winter	Porous 2D	720	50.924	1.024	10.4	159.6853	0.0000	FLOOD RISK
180 minute winter	Porous 2E	180	50.566	0.716	7.2	23.7956	0.0000	FLOOD RISK
120 minute winter	Porous 2F	116	50.268	0.668	13.8	26.2379	0.0000	FLOOD RISK
480 minute winter	Porous 2G	472	49.977	0.727	7.4	43.3675	0.0000	FLOOD RISK
600 minute winter	Porous 2H	585	49.900	0.800	4.0	20.4384	0.0000	FLOOD RISK
960 minute winter	Porous 2I	660	49.750	1.150	8.3	85.0197	23.2621	FLOOD
360 minute summer	S2	352	49.750	1.200	12.9	38.5313	0.0000	FLOOD RISK
15 minute summer	Outfall 2	1	48.440	0.000	2.1	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute winter	Porous 1A	1.000	Porous 1B	1.3	0.652	1.010	0.0395	
480 minute summer	Porous 1B	1.001	Porous 1C	1.2	0.626	1.222	0.0608	
600 minute winter	Porous 1C	1.002	Porous 1D	1.2	0.621	1.313	0.0610	
60 minute summer	Porous 1D	1.003	Porous 1E	7.1	0.904	1.167	0.2332	
2880 minute winter	Porous 1E	1.004	Basin	2.4	0.481	0.572	0.2472	
2160 minute winter	Basin	1.005	S1	1.0	0.124	0.012	0.3288	
2160 minute winter	S1	Hydro-Brake®	Outfall 1	1.0				125.2
60 minute winter	Porous 2A	3.000	Crates 2B	3.6	1.823	1.012	0.0152	
480 minute winter	Crates 2B	Hydro-Brake®	Porous 2C	0.7				
960 minute winter	Porous 2C	3.002	Porous 2I	1.2	0.685	0.871	0.0547	
720 minute winter	Porous 2D	Hydro-Brake®	Porous 2E	0.6				
180 minute winter	Porous 2E	2.001	Porous 2F	1.2	0.600	1.159	0.0426	
120 minute winter	Porous 2F	2.002	Porous 2G	2.8	0.632	1.064	0.1743	
480 minute winter	Porous 2G	2.003	Porous 2H	3.3	0.818	1.084	0.0583	
600 minute winter	Porous 2H	2.004	Porous 2I	3.3	0.753	0.831	0.1135	
960 minute winter	Porous 2I	2.005	S2	5.4	0.322	0.067	0.0847	
360 minute summer	S2	Hydro-Brake®	Outfall 2	2.3				76.4

Appendix G

FEH Point Data and Greenfield Runoff Rate Calculation

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.

Project details

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06/05/2025

Created by

James O'Kelly

Reference

7365

Version

2.0.0

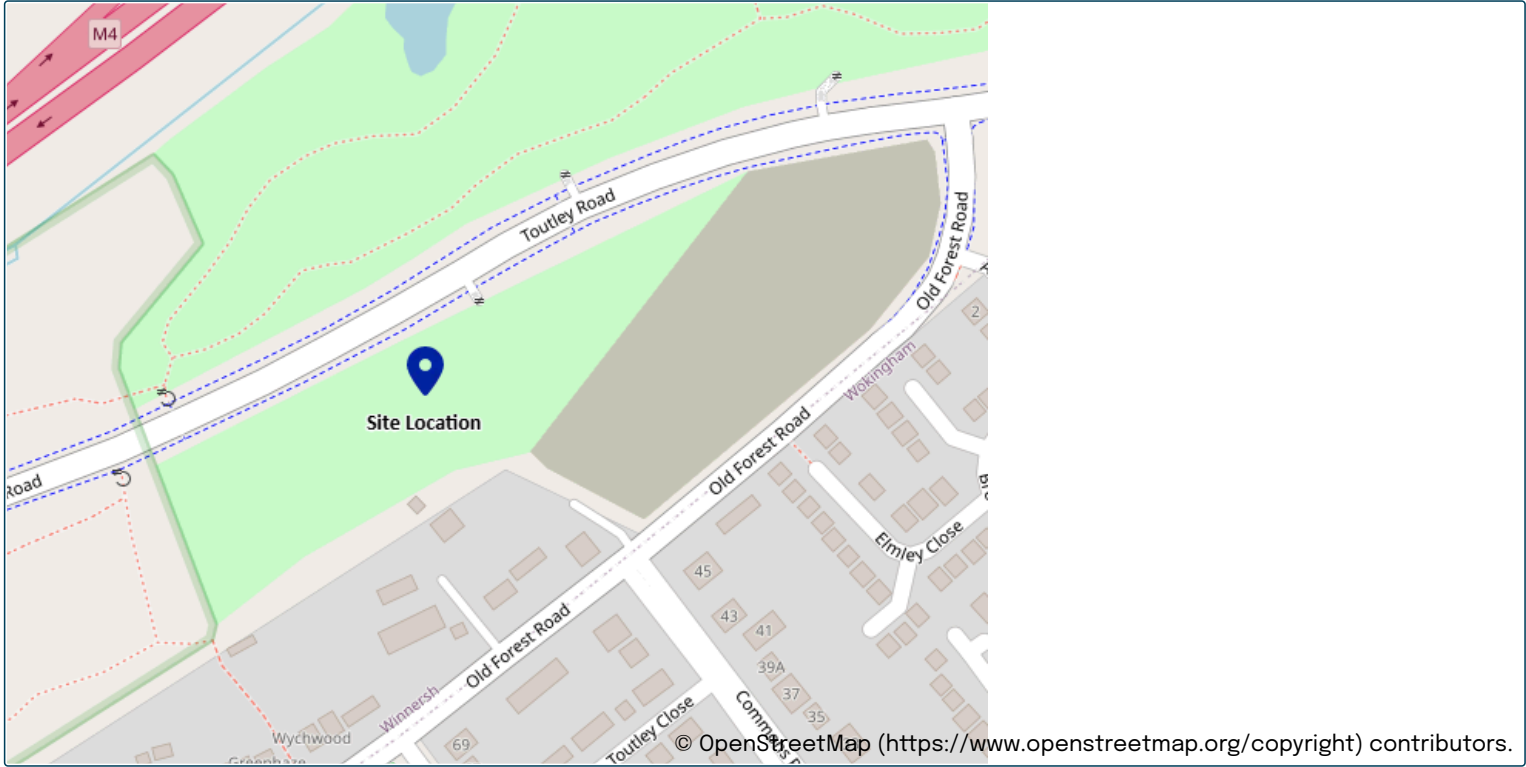
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Site

Old Forest Road

Site

Winnersh



Site

479419

Site

170269

Site details

Total

1

ha

Greenfield runoff

Method

Method

FEH statistical

FEH statistical

SWR

EFCS

Q_{ed}Q_{ar}

Q_{ed}

Q_{ar}

My value

652mm

Map value

651

.258

1.136

1.136

4.24l/s

4.8l/s

Growth curve factors

Hydrological

1year

2year

10year

30year

100year

200year

My value

6

Map value

6

0.85

0.88

1.62

2.3

3.19

3.74

Results

Method

Flow

Flow

Flow

Flow

Flow

Flow

FEH statistical

4.1l/s

4.2l/s

7.8l/s

11.1l/s

15.4l/s

18l/s

Disclaimer

This report was produced using the Greenfield runoff rate estimation tool (2.0.0) developed by HR Wallingford and available at uksuds.com (<https://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 [uksuds.com/terms-conditions](https://www.uksuds.com/terms-conditions) (<https://www.uksuds.com/terms-conditions>). The outputs from this tool have been used to estimate 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, Centre for Ecology and Hydrology, Wallingford Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.

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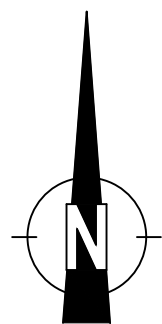
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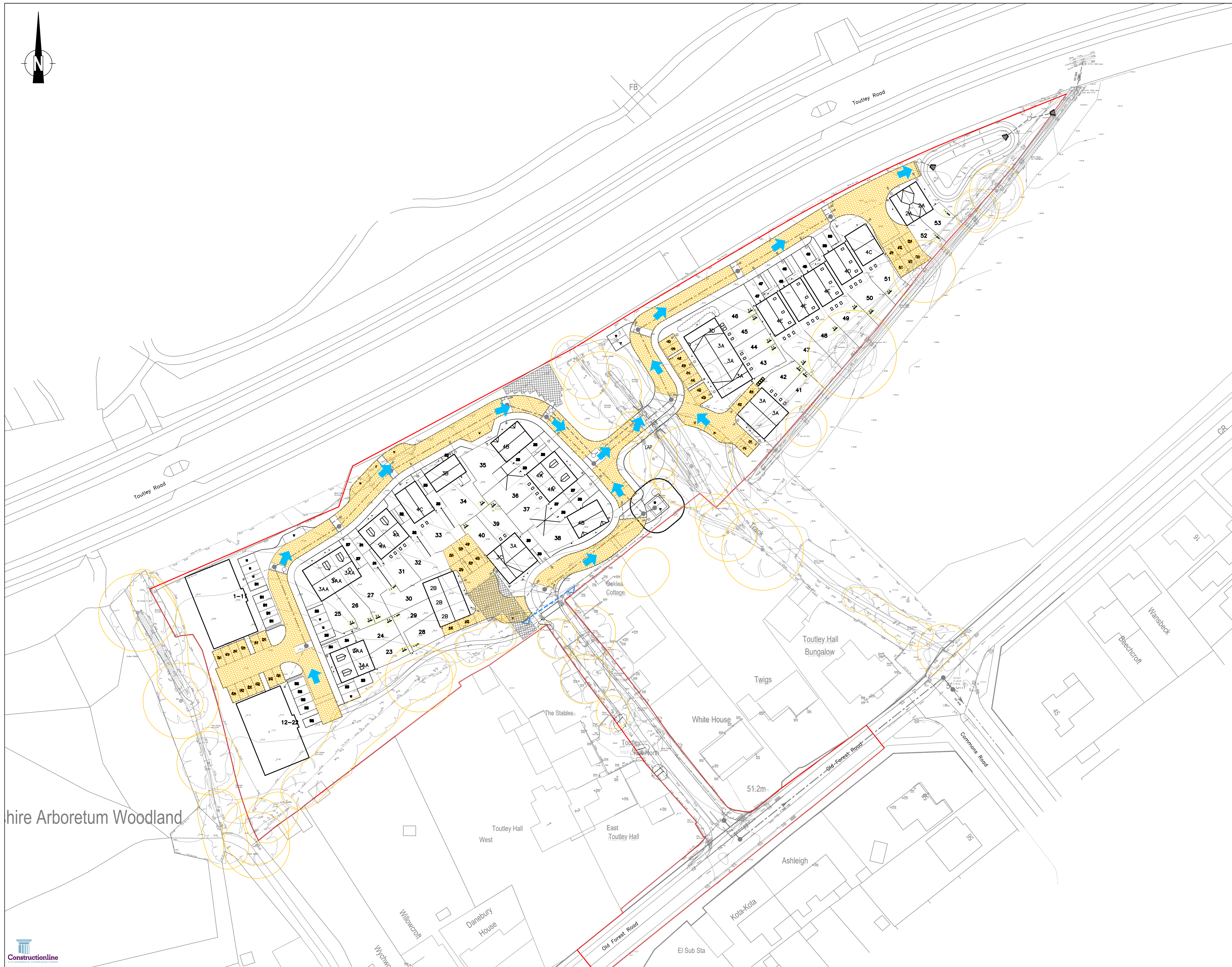
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Appendix H

Flood Exceedance Routes



KEY:
EXCEEDANCE ROUTE



A	UPDATED TO LATEST LAYOUT	MLP	JOK	11.06.25
Rev	Description	Dwn	Chk	Date
REVISIONS				
Preliminary Issue	Submitted for S104			
Planning Issue	Issued for Tender			
Submitted for S38	Issued for Construction			
Submitted for S278	As Built			
DRAWING STATUS				



Stuart Michael Associates Ltd
Coombe House, Coombe Square, Thatcham, Berkshire RG19 4JF
T: 01635 867 711 E: mail@stuartmichael.co.uk
F: 01635 861 715 W: www.stuartmichael.co.uk

JOB TITLE
**OLD FOREST ROAD
WINNERSH**

DRAWING TITLE
EXCEEDANCE ROUTE

DATE: JUNE 25 DRAWN: MLP CHECKED: JOK
DRAWING No: 7365.402 REV: A SCALE: 1:500 @ A1

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Appendix I

SuDS Management and Maintenance and Plans

Table 20.15 Operation and maintenance requirements for pervious pavements

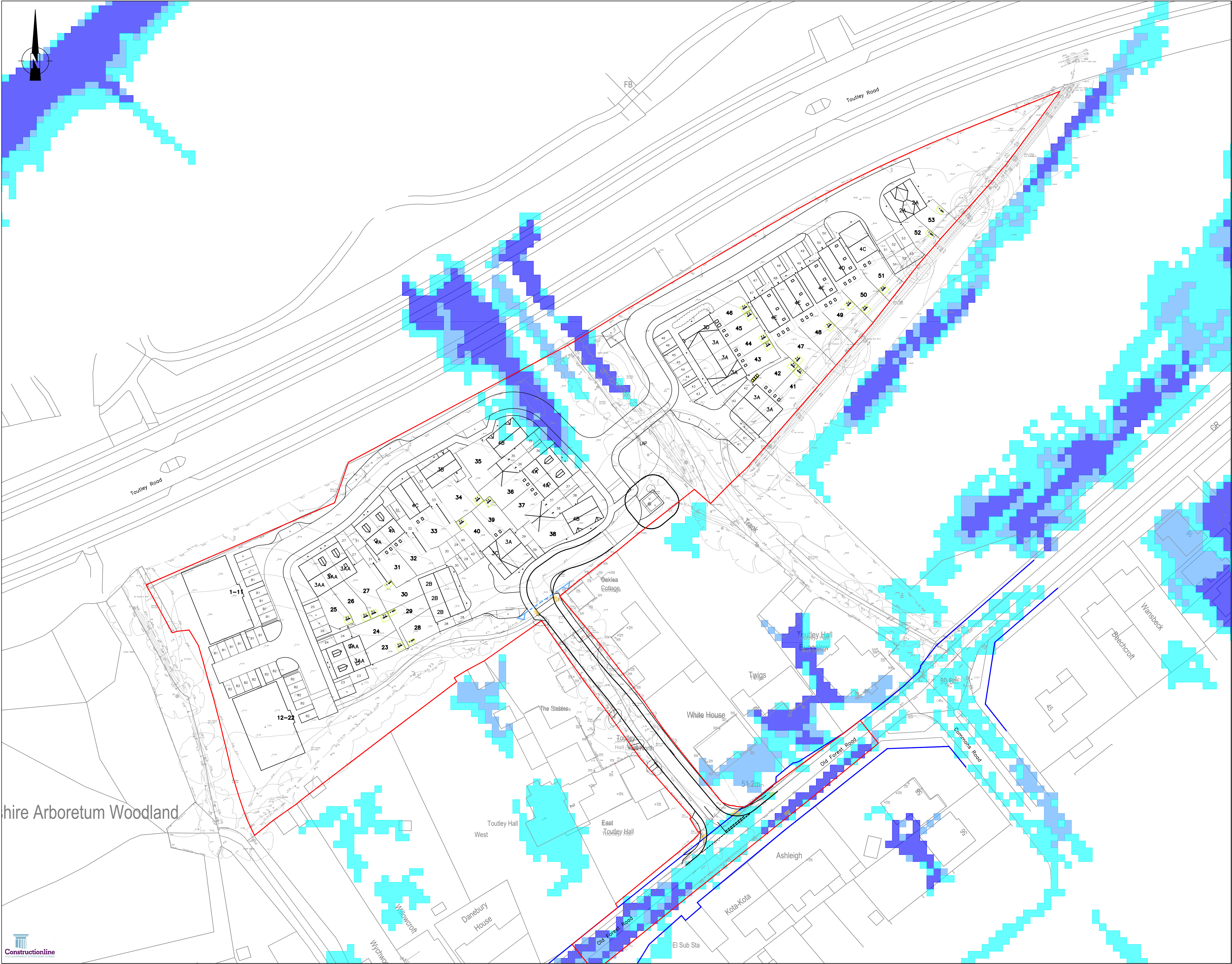
Maintenance Schedule	Required action	Frequency
Regular maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface).	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturer's recommendations - pay particular attention to areas where water runs onto pervious surface from adjacent impermeable areas as this area is most likely to collect the most sediment.
Occasional maintenance	Stabilise and mow contributing and adjacent areas.	As required.
	Removal of weeds or management using glyphosate applied directly into the weeds by an applicator rather than spraying.	As required - once per year on less frequently used pavements
Remedial actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50mm of the level of the paving.	As required.
	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing material.	As required.
	Rehabilitation of surface and upper sub-structure by remedial sweeping.	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging).
Monitoring	Initial inspection.	Monthly for three months after installation.
	Inspect for evidence of poor operation and/or weed growth - if required, take remedial action.	Three-monthly, 48 h after large storms in first six months
	Inspect silt accumulation rates and establish appropriate brushing frequencies.	Annually.
	Monitor inspection chambers	Annually.

Table 22.1 Operation and maintenance requirements for detention basins

Maintenance Schedule	Required action	Frequency
Regular maintenance	Remove litter and debris.	Monthly.
	Cut grass - for spillways and access routes.	Monthly (during growing season), or as required.
	Cut grass - meadow grass in and around basin.	Half yearly (spring - before nesting season, and autumn).
	Manage other vegetation and remove nuisance plants.	Monthly (at start, then as required).
	Inspect inlets, outlets and overflows for blockages, and clear if required.	Monthly
	Inspect banksides, structures, pipework etc for evidence of physical damage.	Monthly
	Inspect inlets and facility surface for silt accumulation. Establish appropriate silt removal frequencies.	Monthly (for first year, then annually as required).
	Check any penstocks and other mechanical devices	Annually.
	Tidy all dead growth before start of growing season.	Annually.
	Remove sediment from inlets, outlet and forebay.	Annually (or as required).
	Manage wetland plants in outlet pool - where provided.	Annually.
Occasional maintenance	Re-seed areas of poor vegetation growth.	As required.
	Prune and trim trees and remove cuttings.	Every 2 years, or as required.
	Remove sediment from inlets, outlets, forebay and main basin when required	Every 5 years, or as required (likely to be minimal requirements where effective upstream source control is provided).
Remedial actions	Repair erosion or other damage by re-seeding or re-turfing.	As required.
	Realignment of rip-rap.	As required.
	Repair / rehabilitation of inlets, outlets and overflows.	As required.
	Re-level uneven surfaces and reinstate design levels.	As required.

Appendix J

Surface Water Flood Risk & Layout Overlay Plan



KEY:

HIGH SURFACE WATER FLOOD RISK +CC

MEDIUM SURFACE WATER FLOOD RISK +CC

LOW SURFACE WATER FLOOD RISK +CC

A	UPDATED TO LATEST LAYOUT	MLP	JOK	11.06.25
Rev	Description	Drn	Chk	Date
REVISIONS				

STUART MICHAEL ASSOCIATES
CONSULTING ENGINEERS

Stuart Michael Associates Ltd
Coombe House, Coombe Square, Thatcham, Berkshire RG19 4JF

T: 01635 867 711 e: mail@stuartmichael.co.uk
F: 01635 861 715 w: www.stuartmichael.co.uk

JOB TITLE

OLD FOREST ROAD
WINNERSH

DRAWING TITLE

SURFACE WATER FLOOD RISK
& LAYOUT OVERLAY

DATE	MAY 25	DRAWN	JOK	CHECKED	MAS
DRAWING No.	7365.401	REV	A	SCALE	1:500
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hire Arboretum Woodland