

Title	Borde Hill Estate, Haywards Heath	Job No:	E9459
Description :	Surface Water Storage Calculations	By:	JWM
		Date:	Dec-23
		Sheet No:	1

Design Data

M5-60(mm) = 20.000

Ratio R = 0.329

Design Criteria

Design Storm = 100Yr + 45% Climate Change

Point of Discharge - Running Stream to West of development Site

Discharge Rate = Restricted to 0.8l/s Qbar equivalent for contributing areas (for all storms up to and including the 1:100yr event = 45% climate change allowance) using an orifice flow restriction device

Total Contributing Area = 1,290m² or 0.129Ha

Results

Provide attenuation basin.

Total basin depth 1.00m including 347mm freeboard.

Maximum water depth 653mm

Side slope graded at 1:3

Surface area at base of 120m²

Surface area at max' water level 221.00m²

Design storage volume 111.35m³

Freeboard volume 87.3m³

Please refer to attached sheets

Calculated by:	James Maddin
Site name:	Borde Hill
Site location:	Borde Hill Lane

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:	51.02801° N
Longitude:	0.12974° W
Reference:	1156839717
Date:	Dec 09 2024 11:45

Runoff estimation approach

IH124

Site characteristics

Total site area (ha):	.129
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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.

Hydrological characteristics

Default	Edited
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SAAR (mm):	840	840	Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.
Hydrological region:	7	7	
Growth curve factor 1 year:	0.85	0.85	
Growth curve factor 30 years:	2.3	2.3	(3) Is $SPR/SPRHOST \leq 0.3$?
Growth curve factor 100 years:	3.19	3.19	Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.
Growth curve factor 200 years:	3.74	3.74	

Greenfield runoff rates		
	Default	Edited
Q_{BAR} (l/s):	0.77	0.77
1 in 1 year (l/s):	0.66	0.66
1 in 30 years (l/s):	1.77	1.77
1 in 100 year (l/s):	2.46	2.46
1 in 200 years (l/s):	2.88	2.88

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.

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99 South Street Eastbourne BN20 4LU		E9459 Borde Hill, Haywards Heath 1:100yr +45% Climate Change				
Date 13/12/2024 12:18 File E9459 Basin Volume Calc...		Designed by SWP Ltd Checked by SWP Ltd				
Micro Drainage		Source Control 2020.1.3				
Summary of Results for 100 year Return Period (+45%)						
Storm Event		Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Summer		49.238	0.238	0.5	31.9	O K
30 min Summer		49.311	0.311	0.5	43.2	O K
60 min Summer		49.385	0.385	0.6	55.3	O K
120 min Summer		49.456	0.456	0.7	67.8	O K
180 min Summer		49.493	0.493	0.7	74.4	O K
240 min Summer		49.516	0.516	0.7	78.8	O K
360 min Summer		49.547	0.547	0.7	84.6	O K
480 min Summer		49.565	0.565	0.7	88.0	O K
600 min Summer		49.575	0.575	0.7	90.1	O K
720 min Summer		49.582	0.582	0.7	91.3	O K
960 min Summer		49.586	0.586	0.7	92.2	O K
1440 min Summer		49.587	0.587	0.7	92.4	O K
2160 min Summer		49.580	0.580	0.7	90.9	O K
2880 min Summer		49.567	0.567	0.7	88.5	O K
4320 min Summer		49.536	0.536	0.7	82.5	O K
5760 min Summer		49.504	0.504	0.7	76.5	O K
7200 min Summer		49.475	0.475	0.7	71.1	O K
8640 min Summer		49.448	0.448	0.6	66.2	O K
10080 min Summer		49.423	0.423	0.6	61.8	O K
15 min Winter		49.263	0.263	0.5	35.8	O K
30 min Winter		49.343	0.343	0.6	48.4	O K
Storm Event		Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	
15 min Summer		133.635	0.0	27.6	23	
30 min Summer		90.718	0.0	34.2	37	
60 min Summer		58.739	0.0	55.5	68	
120 min Summer		36.620	0.0	68.2	126	
180 min Summer		27.295	0.0	74.9	186	
240 min Summer		22.033	0.0	79.2	246	
360 min Summer		16.301	0.0	85.2	364	
480 min Summer		13.139	0.0	89.0	482	
600 min Summer		11.105	0.0	91.6	602	
720 min Summer		9.673	0.0	93.4	720	
960 min Summer		7.772	0.0	95.5	898	
1440 min Summer		5.697	0.0	95.9	1128	
2160 min Summer		4.166	0.0	143.9	1516	
2880 min Summer		3.331	0.0	152.2	1932	
4320 min Summer		2.426	0.0	155.7	2764	
5760 min Summer		1.938	0.0	179.8	3576	
7200 min Summer		1.629	0.0	188.8	4392	
8640 min Summer		1.414	0.0	196.6	5184	
10080 min Summer		1.254	0.0	203.1	5944	
15 min Winter		133.635	0.0	30.0	23	
30 min Winter		90.718	0.0	36.9	37	
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Micro Drainage		Source Control 2020.1.3				
<u>Summary of Results for 100 year Return Period (+45%)</u>						
Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status	
60 min Winter	49.424	0.424	0.6	62.1	O K	
120 min Winter	49.502	0.502	0.7	76.2	O K	
180 min Winter	49.543	0.543	0.7	83.8	O K	
240 min Winter	49.568	0.568	0.7	88.8	O K	
360 min Winter	49.603	0.603	0.7	95.6	O K	
480 min Winter	49.624	0.624	0.8	99.8	O K	
600 min Winter	49.637	0.637	0.8	102.5	O K	
720 min Winter	49.645	0.645	0.8	104.2	O K	
960 min Winter	49.653	0.653	0.8	105.8	O K	
1440 min Winter	49.650	0.650	0.8	105.2	O K	
2160 min Winter	49.640	0.640	0.8	103.1	O K	
2880 min Winter	49.621	0.621	0.8	99.3	O K	
4320 min Winter	49.576	0.576	0.7	90.3	O K	
5760 min Winter	49.531	0.531	0.7	81.5	O K	
7200 min Winter	49.488	0.488	0.7	73.6	O K	
8640 min Winter	49.450	0.450	0.6	66.6	O K	
10080 min Winter	49.415	0.415	0.6	60.4	O K	
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)		
60 min Winter	58.739	0.0	61.8	66		
120 min Winter	36.620	0.0	75.2	124		
180 min Winter	27.295	0.0	82.0	182		
240 min Winter	22.033	0.0	86.4	240		
360 min Winter	16.301	0.0	92.4	358		
480 min Winter	13.139	0.0	96.2	472		
600 min Winter	11.105	0.0	98.8	588		
720 min Winter	9.673	0.0	100.6	700		
960 min Winter	7.772	0.0	102.5	918		
1440 min Winter	5.697	0.0	102.6	1186		
2160 min Winter	4.166	0.0	160.7	1624		
2880 min Winter	3.331	0.0	168.4	2080		
4320 min Winter	2.426	0.0	169.8	2984		
5760 min Winter	1.938	0.0	201.4	3816		
7200 min Winter	1.629	0.0	211.5	4680		
8640 min Winter	1.414	0.0	220.1	5448		
10080 min Winter	1.254	0.0	227.5	6248		
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99 South Street Eastbourne BN20 4LU	E9459 Borde Hill, Haywards Heath 1:100yr +45% Climate Change	
Date 13/12/2024 12:18 File E9459 Basin Volume Calc...	Designed by SWP Ltd Checked by SWP Ltd	
Micro Drainage		Source Control 2020.1.3

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Shortest Storm (mins)	15
Ratio R	0.329	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+45

Time Area Diagram

Total Area (ha) 0.129

Time (mins) Area			Time (mins) Area		
From:	To:	(ha)	From:	To:	(ha)
0	4	0.065	4	8	0.064

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99 South Street Eastbourne BN20 4LU	E9459 Borde Hill, Haywards Heath 1:100yr +45% Climate Change	
Date 13/12/2024 12:18 File E9459 Basin Volume Calc...	Designed by SWP Ltd Checked by SWP Ltd	
Micro Drainage		Source Control 2020.1.3

Model Details

Storage is Online Cover Level (m) 50.000

Tank or Pond Structure

Invert Level (m) 49.000

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	120.0	0.700	215.4	1.400	0.0	2.100	0.0
0.100	131.9	0.800	231.3	1.500	0.0	2.200	0.0
0.200	144.4	0.900	247.8	1.600	0.0	2.300	0.0
0.300	157.5	1.000	264.8	1.700	0.0	2.400	0.0
0.400	171.1	1.001	0.0	1.800	0.0	2.500	0.0
0.500	185.3	1.200	0.0	1.900	0.0		
0.600	200.1	1.300	0.0	2.000	0.0		

Orifice Outflow Control

Diameter (m) 0.020 Discharge Coefficient 0.700 Invert Level (m) 49.000

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99 South Street Eastbourne BN20 4LU		E9459 Borde Hill, Haywards Heath 1:100yr				
Date 13/12/2024 12:19 File E9459 Basin Volume Calc...		Designed by SWP Ltd Checked by SWP Ltd				
Micro Drainage		Source Control 2020.1.3				
Summary of Results for 100 year Return Period						
Storm Event		Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Summer		49.169	0.169	0.4	22.0	O K
30 min Summer		49.222	0.222	0.4	29.7	O K
60 min Summer		49.277	0.277	0.5	38.0	O K
120 min Summer		49.330	0.330	0.6	46.3	O K
180 min Summer		49.357	0.357	0.6	50.7	O K
240 min Summer		49.373	0.373	0.6	53.4	O K
360 min Summer		49.394	0.394	0.6	56.9	O K
480 min Summer		49.405	0.405	0.6	58.8	O K
600 min Summer		49.410	0.410	0.6	59.7	O K
720 min Summer		49.413	0.413	0.6	60.1	O K
960 min Summer		49.415	0.415	0.6	60.4	O K
1440 min Summer		49.413	0.413	0.6	60.2	O K
2160 min Summer		49.404	0.404	0.6	58.6	O K
2880 min Summer		49.390	0.390	0.6	56.3	O K
4320 min Summer		49.361	0.361	0.6	51.4	O K
5760 min Summer		49.333	0.333	0.6	46.8	O K
7200 min Summer		49.309	0.309	0.5	42.9	O K
8640 min Summer		49.287	0.287	0.5	39.4	O K
10080 min Summer		49.267	0.267	0.5	36.3	O K
15 min Winter		49.188	0.188	0.4	24.6	O K
30 min Winter		49.247	0.247	0.5	33.3	O K
Storm Event		Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	
15 min Summer		92.162	0.0	20.2	23	
30 min Summer		62.564	0.0	26.2	37	
60 min Summer		40.510	0.0	38.4	66	
120 min Summer		25.255	0.0	47.8	126	
180 min Summer		18.824	0.0	53.3	186	
240 min Summer		15.195	0.0	57.2	244	
360 min Summer		11.242	0.0	62.9	364	
480 min Summer		9.062	0.0	66.7	482	
600 min Summer		7.659	0.0	69.4	600	
720 min Summer		6.671	0.0	71.4	688	
960 min Summer		5.360	0.0	73.9	796	
1440 min Summer		3.929	0.0	75.6	1044	
2160 min Summer		2.873	0.0	99.5	1456	
2880 min Summer		2.297	0.0	105.9	1872	
4320 min Summer		1.673	0.0	114.0	2684	
5760 min Summer		1.336	0.0	124.0	3464	
7200 min Summer		1.123	0.0	130.2	4256	
8640 min Summer		0.975	0.0	135.5	5016	
10080 min Summer		0.865	0.0	140.0	5752	
15 min Winter		92.162	0.0	22.4	22	
30 min Winter		62.564	0.0	28.5	37	
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99 South Street Eastbourne BN20 4LU		E9459 Borde Hill, Haywards Heath 1:100yr			
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Micro Drainage		Source Control 2020.1.3			
Summary of Results for 100 year Return Period					
Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
60 min Winter	49.307	0.307	0.5	42.6	O K
120 min Winter	49.365	0.365	0.6	52.1	O K
180 min Winter	49.395	0.395	0.6	57.1	O K
240 min Winter	49.413	0.413	0.6	60.2	O K
360 min Winter	49.437	0.437	0.6	64.4	O K
480 min Winter	49.451	0.451	0.6	66.8	O K
600 min Winter	49.458	0.458	0.7	68.1	O K
720 min Winter	49.462	0.462	0.7	68.8	O K
960 min Winter	49.463	0.463	0.7	69.0	O K
1440 min Winter	49.459	0.459	0.7	68.3	O K
2160 min Winter	49.445	0.445	0.6	65.7	O K
2880 min Winter	49.425	0.425	0.6	62.2	O K
4320 min Winter	49.382	0.382	0.6	54.9	O K
5760 min Winter	49.342	0.342	0.6	48.3	O K
7200 min Winter	49.307	0.307	0.5	42.7	O K
8640 min Winter	49.277	0.277	0.5	37.9	O K
10080 min Winter	49.250	0.250	0.5	33.8	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	
60 min Winter	40.510	0.0	43.0	66	
120 min Winter	25.255	0.0	53.4	124	
180 min Winter	18.824	0.0	59.4	182	
240 min Winter	15.195	0.0	63.6	240	
360 min Winter	11.242	0.0	69.5	356	
480 min Winter	9.062	0.0	73.2	470	
600 min Winter	7.659	0.0	75.9	582	
720 min Winter	6.671	0.0	77.9	690	
960 min Winter	5.360	0.0	80.3	896	
1440 min Winter	3.929	0.0	81.7	1112	
2160 min Winter	2.873	0.0	111.4	1576	
2880 min Winter	2.297	0.0	118.5	2020	
4320 min Winter	1.673	0.0	126.3	2896	
5760 min Winter	1.336	0.0	138.8	3696	
7200 min Winter	1.123	0.0	145.9	4536	
8640 min Winter	0.975	0.0	151.8	5280	
10080 min Winter	0.865	0.0	156.9	6048	
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99 South Street Eastbourne BN20 4LU	E9459 Borde Hill, Haywards Heath 1:100yr	
Date 13/12/2024 12:19 File E9459 Basin Volume Calc...	Designed by SWP Ltd Checked by SWP Ltd	
Micro Drainage Source Control 2020.1.3		

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Shortest Storm (mins)	15
Ratio R	0.329	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.129

Time (mins) Area			Time (mins) Area		
From:	To:	(ha)	From:	To:	(ha)
0	4	0.065	4	8	0.064

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Model Details Storage is Online Cover Level (m) 50.000 Tank or Pond Structure Invert Level (m) 49.000 <table><thead><tr><th>Depth (m)</th><th>Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th></tr></thead><tbody><tr><td>0.000</td><td>120.0</td><td>0.700</td><td>215.4</td><td>1.400</td><td>0.0</td><td>2.100</td><td>0.0</td></tr><tr><td>0.100</td><td>131.9</td><td>0.800</td><td>231.3</td><td>1.500</td><td>0.0</td><td>2.200</td><td>0.0</td></tr><tr><td>0.200</td><td>144.4</td><td>0.900</td><td>247.8</td><td>1.600</td><td>0.0</td><td>2.300</td><td>0.0</td></tr><tr><td>0.300</td><td>157.5</td><td>1.000</td><td>264.8</td><td>1.700</td><td>0.0</td><td>2.400</td><td>0.0</td></tr><tr><td>0.400</td><td>171.1</td><td>1.001</td><td>0.0</td><td>1.800</td><td>0.0</td><td>2.500</td><td>0.0</td></tr><tr><td>0.500</td><td>185.3</td><td>1.200</td><td>0.0</td><td>1.900</td><td>0.0</td><td></td><td></td></tr><tr><td>0.600</td><td>200.1</td><td>1.300</td><td>0.0</td><td>2.000</td><td>0.0</td><td></td><td></td></tr></tbody></table> Orifice Outflow Control Diameter (m) 0.020 Discharge Coefficient 0.700 Invert Level (m) 49.000			Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	0.000	120.0	0.700	215.4	1.400	0.0	2.100	0.0	0.100	131.9	0.800	231.3	1.500	0.0	2.200	0.0	0.200	144.4	0.900	247.8	1.600	0.0	2.300	0.0	0.300	157.5	1.000	264.8	1.700	0.0	2.400	0.0	0.400	171.1	1.001	0.0	1.800	0.0	2.500	0.0	0.500	185.3	1.200	0.0	1.900	0.0			0.600	200.1	1.300	0.0	2.000	0.0		
Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)																																																											
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99 South Street Eastbourne BN20 4LU			E9459 Borde Hill, Haywards Heath 1:30yr			
Date 13/12/2024 12:20 File E9459 Basin Volume Calc...			Designed by SWP Ltd Checked by SWP Ltd			
Micro Drainage			Source Control 2020.1.3			
Summary of Results for 30 year Return Period						
	Storm Event		Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³) Status
	15 min Summer		49.133	0.133	0.3	17.0 O K
	30 min Summer		49.174	0.174	0.4	22.6 O K
	60 min Summer		49.216	0.216	0.4	28.8 O K
	120 min Summer		49.258	0.258	0.5	35.0 O K
	180 min Summer		49.280	0.280	0.5	38.4 O K
	240 min Summer		49.294	0.294	0.5	40.6 O K
	360 min Summer		49.311	0.311	0.5	43.3 O K
	480 min Summer		49.320	0.320	0.5	44.7 O K
	600 min Summer		49.324	0.324	0.5	45.4 O K
	720 min Summer		49.327	0.327	0.5	45.8 O K
	960 min Summer		49.330	0.330	0.6	46.3 O K
	1440 min Summer		49.331	0.331	0.6	46.4 O K
	2160 min Summer		49.324	0.324	0.5	45.3 O K
	2880 min Summer		49.313	0.313	0.5	43.6 O K
	4320 min Summer		49.290	0.290	0.5	39.9 O K
	5760 min Summer		49.267	0.267	0.5	36.4 O K
	7200 min Summer		49.247	0.247	0.5	33.4 O K
	8640 min Summer		49.229	0.229	0.5	30.7 O K
	10080 min Summer		49.213	0.213	0.4	28.3 O K
	15 min Winter		49.148	0.148	0.4	19.0 O K
	30 min Winter		49.193	0.193	0.4	25.4 O K
	Storm Event		Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
	15 min Summer		71.178	0.0	15.8	23
	30 min Summer		47.845	0.0	20.9	37
	60 min Summer		30.811	0.0	29.2	66
	120 min Summer		19.234	0.0	36.4	126
	180 min Summer		14.414	0.0	40.9	184
	240 min Summer		11.698	0.0	44.3	244
	360 min Summer		8.714	0.0	49.3	362
	480 min Summer		7.061	0.0	53.1	480
	600 min Summer		5.993	0.0	56.0	582
	720 min Summer		5.240	0.0	58.3	628
	960 min Summer		4.236	0.0	61.5	754
	1440 min Summer		3.134	0.0	64.3	1012
	2160 min Summer		2.315	0.0	80.2	1428
	2880 min Summer		1.865	0.0	86.0	1844
	4320 min Summer		1.374	0.0	94.4	2640
	5760 min Summer		1.107	0.0	102.6	3456
	7200 min Summer		0.936	0.0	108.4	4184
	8640 min Summer		0.816	0.0	113.4	5008
	10080 min Summer		0.727	0.0	117.6	5744
	15 min Winter		71.178	0.0	17.6	22
	30 min Winter		47.845	0.0	23.1	37
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Stephen Wilson Partnership Ltd					Page 2
99 South Street Eastbourne BN20 4LU		E9459 Borde Hill, Haywards Heath 1:30yr			
Date 13/12/2024 12:20 File E9459 Basin Volume Calc...		Designed by SWP Ltd Checked by SWP Ltd			
Micro Drainage		Source Control 2020.1.3			
Summary of Results for 30 year Return Period					
Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
60 min Winter	49.240	0.240	0.5	32.3	O K
120 min Winter	49.286	0.286	0.5	39.4	O K
180 min Winter	49.311	0.311	0.5	43.3	O K
240 min Winter	49.327	0.327	0.5	45.8	O K
360 min Winter	49.347	0.347	0.6	49.0	O K
480 min Winter	49.358	0.358	0.6	50.9	O K
600 min Winter	49.364	0.364	0.6	51.9	O K
720 min Winter	49.367	0.367	0.6	52.4	O K
960 min Winter	49.368	0.368	0.6	52.6	O K
1440 min Winter	49.367	0.367	0.6	52.4	O K
2160 min Winter	49.355	0.355	0.6	50.4	O K
2880 min Winter	49.339	0.339	0.6	47.7	O K
4320 min Winter	49.303	0.303	0.5	42.0	O K
5760 min Winter	49.270	0.270	0.5	36.9	O K
7200 min Winter	49.242	0.242	0.5	32.5	O K
8640 min Winter	49.217	0.217	0.4	28.8	O K
10080 min Winter	49.195	0.195	0.4	25.7	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	
60 min Winter	30.811	0.0	32.7	66	
120 min Winter	19.234	0.0	40.8	124	
180 min Winter	14.414	0.0	45.8	182	
240 min Winter	11.698	0.0	49.5	240	
360 min Winter	8.714	0.0	55.0	354	
480 min Winter	7.061	0.0	59.1	468	
600 min Winter	5.993	0.0	62.1	576	
720 min Winter	5.240	0.0	64.4	684	
960 min Winter	4.236	0.0	67.4	790	
1440 min Winter	3.134	0.0	69.9	1086	
2160 min Winter	2.315	0.0	89.8	1540	
2880 min Winter	1.865	0.0	96.3	1992	
4320 min Winter	1.374	0.0	105.4	2852	
5760 min Winter	1.107	0.0	114.9	3640	
7200 min Winter	0.936	0.0	121.5	4464	
8640 min Winter	0.816	0.0	127.0	5192	
10080 min Winter	0.727	0.0	131.8	5952	
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99 South Street Eastbourne BN20 4LU	E9459 Borde Hill, Haywards Heath 1:30yr	
Date 13/12/2024 12:20 File E9459 Basin Volume Calc...	Designed by SWP Ltd Checked by SWP Ltd	
Micro Drainage		
Source Control 2020.1.3		

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	30	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Shortest Storm (mins)	15
Ratio R	0.329	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.129

Time (mins) Area			Time (mins) Area		
From:	To:	(ha)	From:	To:	(ha)
0	4	0.065	4	8	0.064

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99 South Street Eastbourne BN20 4LU	E9459 Borde Hill, Haywards Heath 1:30yr	
Date 13/12/2024 12:20 File E9459 Basin Volume Calc...	Designed by SWP Ltd Checked by SWP Ltd	
Micro Drainage Source Control 2020.1.3		

Model Details

Storage is Online Cover Level (m) 50.000

Tank or Pond Structure

Invert Level (m) 49.000

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	120.0	0.700	215.4	1.400	0.0	2.100	0.0
0.100	131.9	0.800	231.3	1.500	0.0	2.200	0.0
0.200	144.4	0.900	247.8	1.600	0.0	2.300	0.0
0.300	157.5	1.000	264.8	1.700	0.0	2.400	0.0
0.400	171.1	1.001	0.0	1.800	0.0	2.500	0.0
0.500	185.3	1.200	0.0	1.900	0.0		
0.600	200.1	1.300	0.0	2.000	0.0		

Orifice Outflow Control

Diameter (m) 0.020 Discharge Coefficient 0.700 Invert Level (m) 49.000

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99 South Street Eastbourne BN20 4LU			E9459 Borde Hill, Haywards Heath 1:10yr			
Date 13/12/2024 12:21 File E9459 Basin Volume Calc...			Designed by SWP Ltd Checked by SWP Ltd			
Micro Drainage			Source Control 2020.1.3			
Summary of Results for 10 year Return Period						
	Storm Event		Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³) Status
	15 min Summer		49.106	0.106	0.3	13.4 O K
	30 min Summer		49.138	0.138	0.3	17.7 O K
	60 min Summer		49.171	0.171	0.4	22.3 O K
	120 min Summer		49.205	0.205	0.4	27.1 O K
	180 min Summer		49.223	0.223	0.4	29.8 O K
	240 min Summer		49.235	0.235	0.5	31.5 O K
	360 min Summer		49.249	0.249	0.5	33.7 O K
	480 min Summer		49.256	0.256	0.5	34.7 O K
	600 min Summer		49.260	0.260	0.5	35.3 O K
	720 min Summer		49.263	0.263	0.5	35.8 O K
	960 min Summer		49.267	0.267	0.5	36.3 O K
	1440 min Summer		49.268	0.268	0.5	36.6 O K
	2160 min Summer		49.263	0.263	0.5	35.8 O K
	2880 min Summer		49.255	0.255	0.5	34.5 O K
	4320 min Summer		49.236	0.236	0.5	31.7 O K
	5760 min Summer		49.217	0.217	0.4	29.0 O K
	7200 min Summer		49.201	0.201	0.4	26.5 O K
	8640 min Summer		49.186	0.186	0.4	24.4 O K
	10080 min Summer		49.173	0.173	0.4	22.6 O K
	15 min Winter		49.118	0.118	0.3	15.0 O K
	30 min Winter		49.154	0.154	0.4	19.8 O K
	Storm Event		Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
	15 min Summer		56.229	0.0	12.5	23
	30 min Summer		37.458	0.0	16.6	37
	60 min Summer		24.003	0.0	22.7	66
	120 min Summer		15.001	0.0	28.4	126
	180 min Summer		11.298	0.0	32.1	184
	240 min Summer		9.214	0.0	34.9	244
	360 min Summer		6.907	0.0	39.2	362
	480 min Summer		5.623	0.0	42.5	480
	600 min Summer		4.792	0.0	45.1	536
	720 min Summer		4.204	0.0	47.4	596
	960 min Summer		3.417	0.0	50.9	722
	1440 min Summer		2.550	0.0	54.7	988
	2160 min Summer		1.901	0.0	65.8	1408
	2880 min Summer		1.542	0.0	71.1	1820
	4320 min Summer		1.148	0.0	79.0	2636
	5760 min Summer		0.932	0.0	86.4	3408
	7200 min Summer		0.792	0.0	91.8	4176
	8640 min Summer		0.694	0.0	96.4	4928
	10080 min Summer		0.620	0.0	100.3	5648
	15 min Winter		56.229	0.0	14.0	22
	30 min Winter		37.458	0.0	18.5	37
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99 South Street Eastbourne BN20 4LU		E9459 Borde Hill, Haywards Heath 1:10yr			
Date 13/12/2024 12:21 File E9459 Basin Volume Calc...		Designed by SWP Ltd Checked by SWP Ltd			
Micro Drainage		Source Control 2020.1.3			
Summary of Results for 10 year Return Period					
Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
60 min Winter	49.191	0.191	0.4	25.1	O K
120 min Winter	49.228	0.228	0.5	30.5	O K
180 min Winter	49.249	0.249	0.5	33.6	O K
240 min Winter	49.262	0.262	0.5	35.6	O K
360 min Winter	49.279	0.279	0.5	38.2	O K
480 min Winter	49.288	0.288	0.5	39.6	O K
600 min Winter	49.293	0.293	0.5	40.4	O K
720 min Winter	49.295	0.295	0.5	40.8	O K
960 min Winter	49.298	0.298	0.5	41.2	O K
1440 min Winter	49.298	0.298	0.5	41.1	O K
2160 min Winter	49.287	0.287	0.5	39.5	O K
2880 min Winter	49.273	0.273	0.5	37.4	O K
4320 min Winter	49.244	0.244	0.5	32.8	O K
5760 min Winter	49.216	0.216	0.4	28.8	O K
7200 min Winter	49.193	0.193	0.4	25.4	O K
8640 min Winter	49.172	0.172	0.4	22.5	O K
10080 min Winter	49.155	0.155	0.4	20.0	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	
60 min Winter	24.003	0.0	25.4	66	
120 min Winter	15.001	0.0	31.8	124	
180 min Winter	11.298	0.0	36.0	180	
240 min Winter	9.214	0.0	39.1	238	
360 min Winter	6.907	0.0	43.9	352	
480 min Winter	5.623	0.0	47.5	464	
600 min Winter	4.792	0.0	50.4	572	
720 min Winter	4.204	0.0	52.8	670	
960 min Winter	3.417	0.0	56.4	758	
1440 min Winter	2.550	0.0	59.9	1068	
2160 min Winter	1.901	0.0	73.7	1520	
2880 min Winter	1.542	0.0	79.7	1964	
4320 min Winter	1.148	0.0	88.5	2808	
5760 min Winter	0.932	0.0	96.7	3624	
7200 min Winter	0.792	0.0	102.8	4392	
8640 min Winter	0.694	0.0	108.0	5112	
10080 min Winter	0.620	0.0	112.4	5856	
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99 South Street Eastbourne BN20 4LU	E9459 Borde Hill, Haywards Heath 1:10yr	
Date 13/12/2024 12:21 File E9459 Basin Volume Calc...	Designed by SWP Ltd Checked by SWP Ltd	
Micro Drainage		Source Control 2020.1.3

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	10	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Shortest Storm (mins)	15
Ratio R	0.329	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.129

Time (mins) Area			Time (mins) Area		
From:	To:	(ha)	From:	To:	(ha)
0	4	0.065	4	8	0.064

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99 South Street Eastbourne BN20 4LU	E9459 Borde Hill, Haywards Heath 1:10yr	
Date 13/12/2024 12:21 File E9459 Basin Volume Calc...	Designed by SWP Ltd Checked by SWP Ltd	
Micro Drainage Source Control 2020.1.3		

Model Details

Storage is Online Cover Level (m) 50.000

Tank or Pond Structure

Invert Level (m) 49.000

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	120.0	0.700	215.4	1.400	0.0	2.100	0.0
0.100	131.9	0.800	231.3	1.500	0.0	2.200	0.0
0.200	144.4	0.900	247.8	1.600	0.0	2.300	0.0
0.300	157.5	1.000	264.8	1.700	0.0	2.400	0.0
0.400	171.1	1.001	0.0	1.800	0.0	2.500	0.0
0.500	185.3	1.200	0.0	1.900	0.0		
0.600	200.1	1.300	0.0	2.000	0.0		

Orifice Outflow Control

Diameter (m) 0.020 Discharge Coefficient 0.700 Invert Level (m) 49.000

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99 South Street Eastbourne BN20 4LU			E9459 Borde Hill, Haywards Heath 1:2yr			
Date 13/12/2024 12:21 File E9459 Basin Volume Calc...			Designed by SWP Ltd Checked by SWP Ltd			
Micro Drainage			Source Control 2020.1.3			
Summary of Results for 2 year Return Period						
Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status	
15 min Summer	49.072	0.072	0.2	8.9	O K	
30 min Summer	49.094	0.094	0.3	11.8	O K	
60 min Summer	49.118	0.118	0.3	15.0	O K	
120 min Summer	49.142	0.142	0.4	18.3	O K	
180 min Summer	49.157	0.157	0.4	20.3	O K	
240 min Summer	49.166	0.166	0.4	21.5	O K	
360 min Summer	49.176	0.176	0.4	23.0	O K	
480 min Summer	49.182	0.182	0.4	23.8	O K	
600 min Summer	49.186	0.186	0.4	24.3	O K	
720 min Summer	49.188	0.188	0.4	24.7	O K	
960 min Summer	49.192	0.192	0.4	25.3	O K	
1440 min Summer	49.194	0.194	0.4	25.6	O K	
2160 min Summer	49.191	0.191	0.4	25.1	O K	
2880 min Summer	49.185	0.185	0.4	24.3	O K	
4320 min Summer	49.171	0.171	0.4	22.3	O K	
5760 min Summer	49.158	0.158	0.4	20.4	O K	
7200 min Summer	49.145	0.145	0.4	18.7	O K	
8640 min Summer	49.134	0.134	0.3	17.2	O K	
10080 min Summer	49.124	0.124	0.3	15.8	O K	
15 min Winter	49.080	0.080	0.3	10.0	O K	
30 min Winter	49.105	0.105	0.3	13.2	O K	
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)		
15 min Summer	37.566	0.0	8.2	22		
30 min Summer	25.101	0.0	11.1	37		
60 min Summer	16.200	0.0	15.2	66		
120 min Summer	10.259	0.0	19.3	124		
180 min Summer	7.817	0.0	22.1	184		
240 min Summer	6.432	0.0	24.3	242		
360 min Summer	4.866	0.0	27.6	360		
480 min Summer	3.991	0.0	30.2	430		
600 min Summer	3.421	0.0	32.3	490		
720 min Summer	3.016	0.0	34.1	556		
960 min Summer	2.473	0.0	37.2	686		
1440 min Summer	1.869	0.0	41.5	966		
2160 min Summer	1.411	0.0	48.8	1380		
2880 min Summer	1.157	0.0	53.3	1788		
4320 min Summer	0.874	0.0	60.2	2592		
5760 min Summer	0.716	0.0	66.3	3344		
7200 min Summer	0.613	0.0	70.9	4112		
8640 min Summer	0.540	0.0	74.9	4840		
10080 min Summer	0.485	0.0	78.3	5552		
15 min Winter	37.566	0.0	9.2	22		
30 min Winter	25.101	0.0	12.4	36		
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99 South Street Eastbourne BN20 4LU		E9459 Borde Hill, Haywards Heath 1:2yr			
Date 13/12/2024 12:21 File E9459 Basin Volume Calc...		Designed by SWP Ltd Checked by SWP Ltd			
Micro Drainage		Source Control 2020.1.3			
Summary of Results for 2 year Return Period					
Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
60 min Winter	49.131	0.131	0.3	16.8	O K
120 min Winter	49.159	0.159	0.4	20.6	O K
180 min Winter	49.175	0.175	0.4	22.9	O K
240 min Winter	49.186	0.186	0.4	24.4	O K
360 min Winter	49.198	0.198	0.4	26.2	O K
480 min Winter	49.205	0.205	0.4	27.1	O K
600 min Winter	49.208	0.208	0.4	27.6	O K
720 min Winter	49.211	0.211	0.4	28.0	O K
960 min Winter	49.214	0.214	0.4	28.5	O K
1440 min Winter	49.214	0.214	0.4	28.5	O K
2160 min Winter	49.206	0.206	0.4	27.3	O K
2880 min Winter	49.195	0.195	0.4	25.7	O K
4320 min Winter	49.173	0.173	0.4	22.5	O K
5760 min Winter	49.153	0.153	0.4	19.7	O K
7200 min Winter	49.135	0.135	0.3	17.3	O K
8640 min Winter	49.120	0.120	0.3	15.3	O K
10080 min Winter	49.108	0.108	0.3	13.6	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	
60 min Winter	16.200	0.0	17.1	66	
120 min Winter	10.259	0.0	21.7	122	
180 min Winter	7.817	0.0	24.8	180	
240 min Winter	6.432	0.0	27.2	238	
360 min Winter	4.866	0.0	30.9	350	
480 min Winter	3.991	0.0	33.8	458	
600 min Winter	3.421	0.0	36.2	556	
720 min Winter	3.016	0.0	38.2	580	
960 min Winter	2.473	0.0	41.6	732	
1440 min Winter	1.869	0.0	46.2	1040	
2160 min Winter	1.411	0.0	54.7	1492	
2880 min Winter	1.157	0.0	59.7	1912	
4320 min Winter	0.874	0.0	67.4	2728	
5760 min Winter	0.716	0.0	74.3	3520	
7200 min Winter	0.613	0.0	79.5	4320	
8640 min Winter	0.540	0.0	83.9	5024	
10080 min Winter	0.485	0.0	87.7	5752	
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Date 13/12/2024 12:21 File E9459 Basin Volume Calc...	Designed by SWP Ltd Checked by SWP Ltd	
Micro Drainage	Source Control 2020.1.3	

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	2	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Shortest Storm (mins)	15
Ratio R	0.329	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.129

Time (mins) Area			Time (mins) Area		
From:	To:	(ha)	From:	To:	(ha)
0	4	0.065	4	8	0.064

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99 South Street Eastbourne BN20 4LU	E9459 Borde Hill, Haywards Heath 1:2yr	
Date 13/12/2024 12:21 File E9459 Basin Volume Calc...	Designed by SWP Ltd Checked by SWP Ltd	
Micro Drainage		Source Control 2020.1.3

Model Details

Storage is Online Cover Level (m) 50.000

Tank or Pond Structure

Invert Level (m) 49.000

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	120.0	0.700	215.4	1.400	0.0	2.100	0.0
0.100	131.9	0.800	231.3	1.500	0.0	2.200	0.0
0.200	144.4	0.900	247.8	1.600	0.0	2.300	0.0
0.300	157.5	1.000	264.8	1.700	0.0	2.400	0.0
0.400	171.1	1.001	0.0	1.800	0.0	2.500	0.0
0.500	185.3	1.200	0.0	1.900	0.0		
0.600	200.1	1.300	0.0	2.000	0.0		

Orifice Outflow Control

Diameter (m) 0.020 Discharge Coefficient 0.700 Invert Level (m) 49.000