

Mill Lane, Littleworth, Partridge Green, Horsham RH13 8JU
2 New Build Dwellings

Plot 1 - Soakaway Storm Tanks Calculations

Dwelling Roof Area	140.0 m2
Garage Roof Area	42.0 m2
Paving	0.0
Total	182.0 m2

Total Impermeable Area 182.0 m2

Outflow From Soakaway

	Dia	Rad	Depth	
Soakaway Tests Pit	0.15	0.075	1.00	Metres
Invert Of Inlet			0.20	Metres Below Ground
Effective Storage Depth			0.80	Tank Base
Surface Area AS50, Exc Base			0.271	M2 (50% Storage Depth)

Pecolation Tests Results

	75%	25%	25%-75%
Metres	0.250	0.750	0.500
24.08.26	14:25:00	15:15:00	00:50:00
25.08.26	09:30:00	10:10:00	00:40:00
26.08.26	10:00:00	10:45:00	00:45:00
Average		Mins	45.00

Calc f V 75-25% 0.009 m3
as50 0.271 m2
tp 75-25% 2700 secs
f= V/(as50xtp75-25) 1.21E-05 m/sec

O = AS50xfxD AS50 - Int Surf Area To 50% Storage Depth Exc Base
f - soil percolation rate
D - storm duration

Soil Percolation Rate **F 1.21E-05 m/sec**

O = AS50xfxD AS50 - Int Surface Area To 50% Storage Depth
f - soil percolation rate
D - storm duration

[Microsoft Word - ABG Soil Properties - Permeability TECH NOTE - Rev 1.00](#)

Clean Sands / Low Silt & Clay 1.00E-05 m/sec
Silt Mixtures / Sand Silt & Clay 1.00E-07 m/sec
Clays 1.00E-10 m/sec

Ref Sites

Remple Lane 8.351E-06 m/sec
Carr Road 9.55E-06 m/sec
Wellaville 3.19E-04 m/sec
Wilberfoss 3.57E-04 m/sec
Whitehouse 2.315E-05 m/sec
Red Oaks 5.393E-06 m/sec
Everingham 2.30E-05 m/sec
Highfield 7.353E-05 m/sec
Willowdene 4.10E-06 m/sec

Proposed Storage Tank Volume

Effective Storage Depth	0.80 Metres
Input Width	8.00 Metres
Input Length	4.00 Metres
Tank Volume	25.60 M3
Storage Crates 95% Fee Vol	24.32 M3
AS50	9.60 M2

Ref HR Wallingford Hydro Characteristics Table	
Depths Based On 5 Year, 60 Min Storm Duration Current Growth Curve Factors 20mm Of Rainfall, Hydo Region 7.	Delivering
Region 7	Greenfield runoff rate estimation - members UK SuDS

	Return Storm Periods Years, Depths mm				
Duration, Mins	M1	M5	M10	M30	M100
10	8.50	10.00	16.20	23.00	31.90
30	12.75	15.00	24.30	34.50	47.85
60	17.00	20.00	32.40	46.00	63.80
120	21.25	25.00	40.50	57.50	79.75
240	28.05	33.00	53.46	75.90	105.27
360	32.30	38.00	61.56	87.40	121.22
Growth Factors	0.85	1.00	1.62	2.30	3.19

Region 3

M1 - Mins

Storm Duration D	In m3	Flow Rate m3/sec	Flow Rate l/sec	Sk'y Out m3	Net Flow m3	Tank Vol m3	Excess m3
10	1.547	0.0026	2.58	0.0696	1.477	24.320	22.84
30	2.321	0.0013	1.29	0.2087	2.112	24.320	22.21
60	3.094	0.0009	0.86	0.4174	2.677	24.320	21.64
120	3.868	0.0005	0.54	0.8348	3.033	24.320	21.29
240	5.105	0.0004	0.35	1.6696	3.436	24.320	20.88
360	5.879	0.0003	0.27	2.5043	3.374	24.320	20.95

M30 - Mins

Storm Duration D	In m3	Flow Rate m3/sec	Flow Rate l/sec	Sk'y Out m3	Net Flow m3	Tank Vol m3	Excess m3
10	4.186	0.0070	6.98	0.0696	4.116	24.320	20.20
30	6.279	0.0035	3.49	0.2087	6.070	24.320	18.25
60	8.372	0.0023	2.33	0.4174	7.955	24.320	16.37
120	10.465	0.0015	1.45	0.8348	9.630	24.320	14.69
240	13.814	0.0010	0.96	1.6696	12.144	24.320	12.18
360	15.907	0.0007	0.74	2.5043	13.402	24.320	10.92

M100 - Mins

Storm Duration D	In m3	Flow Rate m3/sec	Flow Rate l/sec	Sk'y Out m3	Net Flow m3	Tank Vol m3	Excess m3
10	5.806	0.0097	9.68	0.0696	5.736	24.320	18.58
30	8.709	0.0048	4.84	0.2087	8.500	24.320	15.82
60	11.612	0.0032	3.23	0.4174	11.194	24.320	13.13
120	14.515	0.0020	2.02	0.8348	13.680	24.320	10.64
240	19.159	0.0013	1.33	1.6696	17.490	24.320	6.83
360	22.062	0.0010	1.02	2.5043	19.558	24.320	4.76

M100 + 40% - Mins

Storm Duration D	In m3	Flow Rate m3/sec	Flow Rate l/sec	Sk'y Out m3	Net Flow m3	Tank Vol m3	Excess m3
10	8.128	0.0135	13.55	0.0696	8.059	24.320	16.26
30	12.192	0.0068	6.77	0.2087	11.983	24.320	12.34
60	16.256	0.0045	4.52	0.4174	15.839	24.320	8.48
120	20.320	0.0028	2.82	0.8348	19.486	24.320	4.83
240	26.823	0.0019	1.86	1.6696	25.153	24.320	-0.83
360	30.887	0.0014	1.43	2.5043	28.383	24.320	-4.06

Check On 50% Drain Time

$T_{s50} \text{ Half Drain Time} = (S \text{ Soakaway Vol} * 0.50) / (A_{s50} \text{ Surf Area To 50\% Depth} * f)$

S *0.50	12.160	m3	Ts50	104880 secs
As50	9.600	m2		1748 mins
f	1.21E-05	m/sec		29 hrs

An 8.0m x 4.0m x 0.8m Deep (25 m3) Tank Formed From Storm Crates Caters For All Storm Events With Minor Surcharging For An Extreme M100 + 40% Storm Event.

Polypipe PSM1A Storm Crates Are 1m (L) x 0.5m (W) x 0.4m (H) = 0.19m3 Eff **128** Approx Nr. Required

