

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

Plot 2 - Soakaway Storm Tanks Calculations

Dwelling Roof Area	142.0 m2
Garage Roof Area	42.0 m2
Paving	0.0
Total	184.0 m2

Total Impermeable Area 184.0 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	15:10:00	16:05:00	00:55:00
25.08.26	09:45:00	10:45:00	01:00:00
26.08.26	10:30:00	11:35:00	01:05:00
Average		Mins	60.00

Calc f V 75-25% 0.009 m3
as50 0.271 m2
tp 75-25% 3600 secs
f= V/(as50xtp75-25) 9.06E-06 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 9.06E-06 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	1.564	0.0026	2.61	0.0522	1.512	24.320	22.81
30	2.346	0.0013	1.30	0.1565	2.189	24.320	22.13
60	3.128	0.0009	0.87	0.3130	2.815	24.320	21.51
120	3.910	0.0005	0.54	0.6261	3.284	24.320	21.04
240	5.161	0.0004	0.36	1.2522	3.909	24.320	20.41
360	5.943	0.0003	0.28	1.8783	4.065	24.320	20.26

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	4.232	0.0071	7.05	0.0522	4.180	24.320	20.14
30	6.348	0.0035	3.53	0.1565	6.191	24.320	18.13
60	8.464	0.0024	2.35	0.3130	8.151	24.320	16.17
120	10.580	0.0015	1.47	0.6261	9.954	24.320	14.37
240	13.966	0.0010	0.97	1.2522	12.713	24.320	11.61
360	16.082	0.0007	0.74	1.8783	14.203	24.320	10.12

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	5.870	0.0098	9.78	0.0522	5.817	24.320	18.50
30	8.804	0.0049	4.89	0.1565	8.648	24.320	15.67
60	11.739	0.0033	3.26	0.3130	11.426	24.320	12.89
120	14.674	0.0020	2.04	0.6261	14.048	24.320	10.27
240	19.370	0.0013	1.35	1.2522	18.118	24.320	6.20
360	22.304	0.0010	1.03	1.8783	20.426	24.320	3.89

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	8.217	0.0137	13.70	0.0522	8.165	24.320	16.15
30	12.326	0.0068	6.85	0.1565	12.170	24.320	12.15
60	16.435	0.0046	4.57	0.3130	16.122	24.320	8.20
120	20.544	0.0029	2.85	0.6261	19.918	24.320	4.40
240	27.118	0.0019	1.88	1.2522	25.865	24.320	-1.55
360	31.226	0.0014	1.45	1.8783	29.348	24.320	-5.03

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	139840 secs
As50	9.600	m2		2331 mins
f	9.06E-06	m/sec		39 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

