

Calcinotto		Page 1
Jonsen House 43 Commercial Road Poole BH14 0HU	114290-CAL-XX-XX-CA-D-100 Orchard Gate, Dibden Purlieu Tank A Storage - 1:100+40	
Date 11/07/2022 15:42	Designed by GEB	
File 114290 - Storage Estimate A_22-07...	Checked by GEB	
XP Solutions	Source Control 2020.1	

Summary of Results for 30 year Return Period (+20%)

Half Drain Time : 963 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	37.627	0.227	0.8	38.0	O K
30 min Summer	37.702	0.302	0.8	50.6	O K
60 min Summer	37.778	0.378	0.8	63.3	O K
120 min Summer	37.833	0.433	0.9	72.5	O K
180 min Summer	37.863	0.463	0.9	77.4	O K
240 min Summer	37.882	0.482	0.9	80.5	O K
360 min Summer	37.903	0.503	0.9	84.1	O K
480 min Summer	37.912	0.512	0.9	85.7	O K
600 min Summer	37.915	0.515	0.9	86.1	O K
720 min Summer	37.914	0.514	0.9	85.9	O K
960 min Summer	37.908	0.508	0.9	84.9	O K
1440 min Summer	37.896	0.496	0.9	82.9	O K
2160 min Summer	37.877	0.477	0.9	79.8	O K
2880 min Summer	37.860	0.460	0.9	76.9	O K
4320 min Summer	37.830	0.430	0.9	71.9	O K
5760 min Summer	37.804	0.404	0.9	67.5	O K
7200 min Summer	37.783	0.383	0.9	64.0	O K
8640 min Summer	37.764	0.364	0.8	60.9	O K
10080 min Summer	37.748	0.348	0.8	58.2	O K
15 min Winter	37.655	0.255	0.8	42.7	O K
30 min Winter	37.740	0.340	0.8	56.8	O K
60 min Winter	37.826	0.426	0.9	71.2	O K
120 min Winter	37.889	0.489	0.9	81.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	89.167	0.0	25
30 min Summer	59.579	0.0	40
60 min Summer	37.766	0.0	68
120 min Summer	22.241	0.0	128
180 min Summer	16.259	0.0	186
240 min Summer	13.013	0.0	246
360 min Summer	9.518	0.0	364
480 min Summer	7.625	0.0	482
600 min Summer	6.425	0.0	602
720 min Summer	5.589	0.0	718
960 min Summer	4.496	0.0	822
1440 min Summer	3.323	0.0	1074
2160 min Summer	2.470	0.0	1480
2880 min Summer	2.015	0.0	1904
4320 min Summer	1.532	0.0	2728
5760 min Summer	1.277	0.0	3528
7200 min Summer	1.120	0.0	4328
8640 min Summer	1.012	0.0	5112
10080 min Summer	0.935	0.0	5944
15 min Winter	89.167	0.0	25
30 min Winter	59.579	0.0	39
60 min Winter	37.766	0.0	68
120 min Winter	22.241	0.0	126

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Summary of Results for 30 year Return Period (+20%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
180 min Winter	37.924	0.524	0.9	87.6	O K
240 min Winter	37.947	0.547	0.9	91.4	O K
360 min Winter	37.975	0.575	0.9	96.1	O K
480 min Winter	37.989	0.589	0.9	98.5	O K
600 min Winter	37.996	0.596	0.9	99.6	O K
720 min Winter	37.998	0.598	0.9	100.0	O K
960 min Winter	37.994	0.594	0.9	99.3	O K
1440 min Winter	37.976	0.576	0.9	96.4	O K
2160 min Winter	37.949	0.549	0.9	91.8	O K
2880 min Winter	37.920	0.520	0.9	86.9	O K
4320 min Winter	37.865	0.465	0.9	77.7	O K
5760 min Winter	37.815	0.415	0.9	69.5	O K
7200 min Winter	37.773	0.373	0.8	62.4	O K
8640 min Winter	37.736	0.336	0.8	56.2	O K
10080 min Winter	37.704	0.304	0.8	50.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
180 min Winter	16.259	0.0	184
240 min Winter	13.013	0.0	242
360 min Winter	9.518	0.0	358
480 min Winter	7.625	0.0	472
600 min Winter	6.425	0.0	584
720 min Winter	5.589	0.0	696
960 min Winter	4.496	0.0	910
1440 min Winter	3.323	0.0	1144
2160 min Winter	2.470	0.0	1604
2880 min Winter	2.015	0.0	2076
4320 min Winter	1.532	0.0	2948
5760 min Winter	1.277	0.0	3808
7200 min Winter	1.120	0.0	4616
8640 min Winter	1.012	0.0	5448
10080 min Winter	0.935	0.0	6256

Rainfall Details

Rainfall Model	FEH	Winter Storms	Yes
Return Period (years)	30	Cv (Summer)	0.750
FEH Rainfall Version	2013	Cv (Winter)	0.840
Site Location	GB 441283 106591 SU 41283 06591	Shortest Storm (mins)	15
Data Type	Point	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+20

Time Area Diagram

Total Area (ha) 0.233

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From: To: (ha)		From: To: (ha)		From: To: (ha)	
0 4	0.100	4 8	0.100	8 12	0.033

Model Details

Storage is Online Cover Level (m) 39.600

Complex Structure

Cellular Storage

Invert Level (m) 37.400 Safety Factor 3.0
Infiltration Coefficient Base (m/hr) 0.04680 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.04680

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	176.0	176.0	0.800	176.0	218.5	0.801	0.0	218.5

Infiltration Blanket

Infiltration Coefficient Base (m/hr) 0.00000 Diameter/Width (m) 10.0
Safety Factor 3.0 Length (m) 29.0
Porosity 0.30 Cap Volume Depth (m) 0.350
Invert Level (m) 39.120

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XP Solutions	Source Control 2020.1	

Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 1429 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	37.734	0.334	0.8	55.9	O K
30 min Summer	37.847	0.447	0.9	74.7	O K
60 min Summer	37.968	0.568	0.9	95.0	O K
120 min Summer	38.042	0.642	0.9	107.4	O K
180 min Summer	38.085	0.685	0.9	114.5	O K
240 min Summer	38.114	0.714	0.9	119.4	O K
360 min Summer	38.151	0.751	0.9	125.6	O K
480 min Summer	38.173	0.773	0.9	129.2	O K
600 min Summer	38.185	0.785	0.9	131.2	O K
720 min Summer	38.191	0.791	0.9	132.3	O K
960 min Summer	38.193	0.793	0.9	132.6	O K
1440 min Summer	38.179	0.779	0.9	130.2	O K
2160 min Summer	38.155	0.755	0.9	126.2	O K
2880 min Summer	38.134	0.734	0.9	122.7	O K
4320 min Summer	38.100	0.700	0.9	117.0	O K
5760 min Summer	38.073	0.673	0.9	112.5	O K
7200 min Summer	38.053	0.653	0.9	109.2	O K
8640 min Summer	38.037	0.637	0.9	106.5	O K
10080 min Summer	38.025	0.625	0.9	104.4	O K
15 min Winter	37.775	0.375	0.8	62.7	O K
30 min Winter	37.902	0.502	0.9	83.9	O K
60 min Winter	38.038	0.638	0.9	106.7	O K
120 min Winter	38.124	0.724	0.9	121.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	130.140	0.0	26
30 min Summer	87.360	0.0	40
60 min Summer	56.055	0.0	70
120 min Summer	32.360	0.0	128
180 min Summer	23.471	0.0	188
240 min Summer	18.702	0.0	246
360 min Summer	13.604	0.0	366
480 min Summer	10.865	0.0	484
600 min Summer	9.135	0.0	604
720 min Summer	7.935	0.0	722
960 min Summer	6.367	0.0	960
1440 min Summer	4.682	0.0	1214
2160 min Summer	3.453	0.0	1596
2880 min Summer	2.795	0.0	1996
4320 min Summer	2.098	0.0	2848
5760 min Summer	1.730	0.0	3680
7200 min Summer	1.507	0.0	4472
8640 min Summer	1.356	0.0	5280
10080 min Summer	1.248	0.0	6144
15 min Winter	130.140	0.0	26
30 min Winter	87.360	0.0	40
60 min Winter	56.055	0.0	68
120 min Winter	32.360	0.0	126

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
180 min Winter	38.174	0.774	0.9	129.4	O K
240 min Winter	39.135	1.735	0.9	135.1	O K
360 min Winter	39.224	1.824	0.9	142.8	O K
480 min Winter	39.278	1.878	0.9	147.5	O K
600 min Winter	39.312	1.912	0.9	150.6	Flood Risk
720 min Winter	39.335	1.935	0.9	152.5	Flood Risk
960 min Winter	39.356	1.956	0.9	154.4	Flood Risk
1440 min Winter	39.342	1.942	0.9	153.1	Flood Risk
2160 min Winter	39.275	1.875	0.9	147.3	O K
2880 min Winter	39.216	1.816	0.9	142.2	O K
4320 min Winter	38.192	0.792	0.9	132.3	O K
5760 min Winter	38.139	0.739	0.9	123.6	O K
7200 min Winter	38.096	0.696	0.9	116.4	O K
8640 min Winter	38.060	0.660	0.9	110.3	O K
10080 min Winter	38.028	0.628	0.9	105.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
180 min Winter	23.471	0.0	184
240 min Winter	18.702	0.0	242
360 min Winter	13.604	0.0	360
480 min Winter	10.865	0.0	476
600 min Winter	9.135	0.0	590
720 min Winter	7.935	0.0	706
960 min Winter	6.367	0.0	932
1440 min Winter	4.682	0.0	1360
2160 min Winter	3.453	0.0	1708
2880 min Winter	2.795	0.0	2164
4320 min Winter	2.098	0.0	3076
5760 min Winter	1.730	0.0	3976
7200 min Winter	1.507	0.0	4832
8640 min Winter	1.356	0.0	5712
10080 min Winter	1.248	0.0	6560

Rainfall Details

Rainfall Model	FEH	Winter Storms	Yes
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FEH Rainfall Version	2013	Cv (Winter)	0.840
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Infiltration Coefficient Base (m/hr) 0.04680 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.04680

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	176.0	176.0	0.800	176.0	218.5	0.801	0.0	218.5

Infiltration Blanket

Infiltration Coefficient Base (m/hr) 0.00000 Diameter/Width (m) 10.0
Safety Factor 3.0 Length (m) 29.0
Porosity 0.30 Cap Volume Depth (m) 0.350
Invert Level (m) 39.120