

Betts Associates Limited		Page 1
6 Old Marsh Farm Barns Welsh Road Sealand CH5 2LY	Rossett Road, Rossett Basin 01	
Date 23/06/2021	Designed by CP	
File INITIAL DESIGN SIZING - BASIN 0...	Checked by RDN	
XP Solutions	Source Control 2020.1	

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

Half Drain Time : 212 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	11.979	0.429	12.2	176.0	O K
30 min Summer	12.092	0.542	13.6	230.4	O K
60 min Summer	12.191	0.641	14.8	281.5	O K
120 min Summer	12.238	0.688	15.4	306.6	O K
180 min Summer	12.241	0.691	15.4	308.5	O K
240 min Summer	12.236	0.686	15.3	305.7	O K
360 min Summer	12.216	0.666	15.1	294.6	O K
480 min Summer	12.187	0.637	14.7	279.5	O K
600 min Summer	12.158	0.608	14.4	264.3	O K
720 min Summer	12.130	0.580	14.0	250.1	O K
960 min Summer	12.079	0.529	13.4	224.4	O K
1440 min Summer	11.989	0.439	12.3	180.7	O K
2160 min Summer	11.877	0.327	11.0	129.8	O K
2880 min Summer	11.790	0.240	10.0	92.7	O K
4320 min Summer	11.672	0.122	8.7	45.1	O K
5760 min Summer	11.610	0.060	8.0	21.9	O K
7200 min Summer	11.596	0.046	7.2	16.6	O K
8640 min Summer	11.591	0.041	6.4	14.6	O K
10080 min Summer	11.587	0.037	5.8	13.3	O K
15 min Winter	12.026	0.476	12.8	198.2	O K
30 min Winter	12.150	0.600	14.3	260.0	O K
60 min Winter	12.261	0.711	15.6	319.1	O K
120 min Winter	12.318	0.768	16.4	351.1	O K
180 min Winter	12.326	0.776	16.5	355.9	O K
240 min Winter	12.318	0.768	16.4	351.1	O K
360 min Winter	12.294	0.744	16.1	337.7	O K
480 min Winter	12.258	0.708	15.6	317.5	O K
600 min Winter	12.219	0.669	15.1	296.5	O K
720 min Winter	12.181	0.631	14.7	276.3	O K
960 min Winter	12.110	0.560	13.8	239.9	O K
1440 min Winter	11.986	0.436	12.3	179.3	O K
2160 min Winter	11.837	0.287	10.6	112.5	O K
2880 min Winter	11.726	0.176	9.3	66.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	155.031	0.0	25
30 min Summer	103.610	0.0	39
60 min Summer	66.309	0.0	66
120 min Summer	39.790	0.0	122
180 min Summer	29.273	0.0	162
240 min Summer	23.457	0.0	194
360 min Summer	17.069	0.0	258
480 min Summer	13.516	0.0	328
600 min Summer	11.245	0.0	396
720 min Summer	9.661	0.0	464
960 min Summer	7.594	0.0	600
1440 min Summer	5.379	0.0	864
2160 min Summer	3.783	0.0	1240
2880 min Summer	2.943	0.0	1596
4320 min Summer	2.060	0.0	2296
5760 min Summer	1.611	0.0	2952
7200 min Summer	1.358	0.0	3672
8640 min Summer	1.197	0.0	4376
10080 min Summer	1.089	0.0	5112
15 min Winter	155.031	0.0	25
30 min Winter	103.610	0.0	39
60 min Winter	66.309	0.0	66
120 min Winter	39.790	0.0	120
180 min Winter	29.273	0.0	174
240 min Winter	23.457	0.0	202
360 min Winter	17.069	0.0	276
480 min Winter	13.516	0.0	354
600 min Winter	11.245	0.0	428
720 min Winter	9.661	0.0	502
960 min Winter	7.594	0.0	644
1440 min Winter	5.379	0.0	916
2160 min Winter	3.783	0.0	1300
2880 min Winter	2.943	0.0	1652

Betts Associates Limited		Page 2
6 Old Marsh Farm Barns Welsh Road Sealand CH5 2LY	Rossett Road, Rossett Basin 01	
Date 23/06/2021	Designed by CP	
File INITIAL DESIGN SIZING - BASIN 0...	Checked by RDN	
XP Solutions	Source Control 2020.1	

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
4320 min Winter	11.600	0.050	7.9	18.2	O K
5760 min Winter	11.590	0.040	6.2	14.3	O K
7200 min Winter	11.584	0.034	5.2	12.1	O K
8640 min Winter	11.580	0.030	4.6	10.6	O K
10080 min Winter	11.577	0.027	4.2	9.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
4320 min Winter	2.060	0.0	2208
5760 min Winter	1.611	0.0	2904
7200 min Winter	1.358	0.0	3648
8640 min Winter	1.197	0.0	4304
10080 min Winter	1.089	0.0	5040

Model Details

Storage is Online Cover Level (m) 12.689

Infiltration Basin Structure

Invert Level (m) 11.550 Infiltration Coefficient Side (m/hr) 0.14760 Porosity 1.00
 Infiltration Coefficient Base (m/hr) 0.14760 Safety Factor 2.0

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	355.7	1.138	685.9

Rainfall Details

Rainfall Model	FEH	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
FEH Rainfall Version	2013	Cv (Winter)	0.840
Site Location	GB 337307 357080 SJ 37307 57080	Shortest Storm (mins)	15
Data Type	Point	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.649

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From: To:	(ha)	From: To:	(ha)	From: To:	(ha)
0 4	0.216	4 8	0.216	8 12	0.216

Cut: 296.951m³
Fill: 55.200m³, Water: 381.605m³

Earthworks

General Information

Name: Pond 1

Type: Pond

Volumes / Area

Cut: 296.9508m³

Fill: 55.1997m³

Area: 685.9110m²

Display

Style: Height Colouring

Max Colour

Min Colour

Band Depth: 0.5m

Ponds

Freeboard: 0.3000m

Water Level: 12.3888m



12.6888m Max

11.55m Min

Water Volume: 381.6070m³

OK

Cancel

