

Aire House
 12 Victoria Avenue
 Harrogate, HG1 1ED



Date 22/06/2022 17:30
 File 21.06.22 STORAGE CHECK....

Designed by Jamess
 Checked by

Innovyze Source Control 2019.1

Summary of Results for 100 year Return Period (+30%)

Half Drain Time : 2742 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max E Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	19.657	0.257	0.0	0.5	0.5	73.0	O K
30 min Summer	19.737	0.337	0.0	0.5	0.5	95.7	O K
60 min Summer	19.820	0.420	0.0	0.6	0.6	119.4	O K
120 min Summer	19.905	0.505	0.0	0.7	0.7	143.4	O K
180 min Summer	19.953	0.553	0.0	0.7	0.7	157.1	O K
240 min Summer	19.985	0.585	0.0	0.7	0.7	166.2	O K
360 min Summer	20.027	0.627	0.0	0.7	0.7	178.0	O K
480 min Summer	20.055	0.655	0.0	0.7	0.7	186.2	O K
600 min Summer	20.076	0.676	0.0	0.8	0.8	192.0	O K
720 min Summer	20.091	0.691	0.0	0.8	0.8	196.3	O K
960 min Summer	20.111	0.711	0.0	0.8	0.8	201.8	O K
1440 min Summer	20.126	0.726	0.0	0.8	0.8	206.1	O K
2160 min Summer	20.121	0.721	0.0	0.8	0.8	204.9	O K
2880 min Summer	20.113	0.713	0.0	0.8	0.8	202.5	O K
4320 min Summer	20.092	0.692	0.0	0.8	0.8	196.5	O K
5760 min Summer	20.067	0.667	0.0	0.8	0.8	189.5	O K
7200 min Summer	20.041	0.641	0.0	0.7	0.7	182.0	O K
8640 min Summer	20.015	0.615	0.0	0.7	0.7	174.6	O K
10080 min Summer	19.990	0.590	0.0	0.7	0.7	167.5	O K
15 min Winter	19.688	0.288	0.0	0.5	0.5	81.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	121.269	0.0	35.0	27
30 min Summer	79.695	0.0	40.7	42
60 min Summer	49.937	0.0	81.5	72
120 min Summer	30.267	0.0	91.3	130
180 min Summer	22.297	0.0	96.5	190
240 min Summer	17.851	0.0	99.7	250
360 min Summer	12.957	0.0	103.6	368
480 min Summer	10.330	0.0	105.9	488
600 min Summer	8.659	0.0	107.4	608
720 min Summer	7.492	0.0	108.2	726
960 min Summer	5.959	0.0	108.6	964
1440 min Summer	4.309	0.0	106.6	1442
2160 min Summer	3.110	0.0	201.4	1928
2880 min Summer	2.466	0.0	200.1	2280
4320 min Summer	1.775	0.0	189.2	3036
5760 min Summer	1.405	0.0	318.3	3872
7200 min Summer	1.171	0.0	320.8	4688
8640 min Summer	1.008	0.0	317.1	5536
10080 min Summer	0.889	0.0	307.9	6352
15 min Winter	121.269	0.0	37.3	27

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Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
30 min Winter	19.778	0.378	0.0	0.6	0.6	107.2	O K
60 min Winter	19.871	0.471	0.0	0.6	0.6	133.8	O K
120 min Winter	19.966	0.566	0.0	0.7	0.7	160.8	O K
180 min Winter	20.021	0.621	0.0	0.7	0.7	176.3	O K
240 min Winter	20.057	0.657	0.0	0.7	0.7	186.7	O K
360 min Winter	20.105	0.705	0.0	0.8	0.8	200.2	O K
480 min Winter	20.138	0.738	0.0	0.8	0.8	209.7	O K
600 min Winter	20.162	0.762	0.0	0.8	0.8	216.5	O K
720 min Winter	20.180	0.780	0.0	0.8	0.8	221.6	O K
960 min Winter	20.204	0.804	0.0	0.8	0.8	228.4	O K
1440 min Winter	20.239	0.839	0.0	0.8	0.8	234.5	O K
2160 min Winter	20.240	0.840	0.0	0.8	0.8	234.7	O K
2880 min Winter	20.213	0.813	0.0	0.8	0.8	230.4	O K
4320 min Winter	20.184	0.784	0.0	0.8	0.8	222.6	O K
5760 min Winter	20.149	0.749	0.0	0.8	0.8	212.7	O K
7200 min Winter	20.111	0.711	0.0	0.8	0.8	202.1	O K
8640 min Winter	20.074	0.674	0.0	0.8	0.8	191.5	O K
10080 min Winter	20.038	0.638	0.0	0.7	0.7	181.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
30 min Winter	79.695	0.0	43.4	41
60 min Winter	49.937	0.0	87.5	70
120 min Winter	30.267	0.0	97.9	128
180 min Winter	22.297	0.0	103.3	188
240 min Winter	17.851	0.0	106.7	246
360 min Winter	12.957	0.0	110.7	364
480 min Winter	10.330	0.0	113.2	480
600 min Winter	8.659	0.0	114.7	598
720 min Winter	7.492	0.0	115.6	714
960 min Winter	5.959	0.0	116.0	944
1440 min Winter	4.309	0.0	113.7	1398
2160 min Winter	3.110	0.0	217.0	2052
2880 min Winter	2.466	0.0	215.2	2400
4320 min Winter	1.775	0.0	203.2	3252
5760 min Winter	1.405	0.0	350.1	4168
7200 min Winter	1.171	0.0	351.3	5056
8640 min Winter	1.008	0.0	346.1	5968
10080 min Winter	0.889	0.0	335.3	6856

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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)	19.000	Shortest Storm (mins)	15
Ratio R	0.400	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+30

Time Area Diagram

Total Area (ha) 0.323

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From:	To:	From:	To:	From:	To:
	(ha)		(ha)		(ha)
0	4	0.108	4	8	0.108
				8	12
					0.108

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Model Details

Storage is Online Cover Level (m) 20.700

Cellular Storage Structure

Invert Level (m) 19.400 Safety Factor 2.0
 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
 Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	299.0	299.0	0.900	0.0	356.6
0.800	299.0	356.6			

Orifice Outflow Control

Diameter (m) 0.021 Discharge Coefficient 0.600 Invert Level (m) 19.385