

Title:	Parsonage Barn, Cobham	Job No:	1910
Description :	Soakaway Calculations	By:	DJP
		Date:	Feb '26
		Sheet No:	0

Soakaway Design Criteria

Area Drained	250 m2
Peak Design Return Period	100 Year Return Period
Climate Change Allowance	40 % additional allowance
Rainfall Data	FEH-22 Point Data

Propose a 2.0m (W) x 4.5m (L) x 1.2m (D) Geo-cellular Soakaway

Simulated Storm Durations

15 - 1440 minute events for 2YR, 30YR and 100YR return periods

Results

See attached sheets



Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	2	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	0.750	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	6.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	Cover Level (m)	Diameter (mm)	Depth (m)
S/A	0.025	10.000	450	1.800

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Additional Storage (m³/ha)	20.0
Summer CV	0.750	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	0.840	Drain Down Time (mins)	240	Check Discharge Volume	x

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440
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Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
10	0	0	0
30	0	0	0
30	40	0	0
100	0	0	0
100	40	0	0

Node S/A Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.18000	Safety Factor	2.0	Invert Level (m)	8.200
Side Inf Coefficient (m/hr)	0.18000	Porosity	1.00	Time to half empty (mins)	253

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	9.0	9.0	1.200	9.0	23.4	1.201	0.0	23.4

Results for 2 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
180 minute winter	S/A	136	8.424	0.224	0.9	2.1180	0.0000	OK

Link Event (Velocity)	US Node	Link	Outflow (l/s)
180 minute winter	S/A	Infiltration	0.3

Results for 10 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
120 minute winter	S/A	112	8.633	0.433	2.0	4.0904	0.0000	OK
Link Event (Velocity)	US Node	Link	Outflow (l/s)					
120 minute winter	S/A	Infiltration	0.3					

Results for 30 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
120 minute winter	S/A	116	8.785	0.585	2.6	5.5203	0.0000	OK
Link Event (Velocity)	US Node	Link	Outflow (l/s)					
120 minute winter	S/A	Infiltration	0.4					

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
180 minute winter	S/A	168	9.074	0.874	2.7	8.2464	0.0000	OK
Link Event (Velocity)		US Node	Link	Outflow (l/s)				
180 minute winter		S/A	Infiltration	0.5				

Results for 100 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
360 minute winter	S/A	264	8.979	0.779	1.5	7.3530	0.0000	OK

Link Event (Velocity)	US Node	Link	Outflow (l/s)
360 minute winter	S/A	Infiltration	0.5

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
360 minute winter	S/A	272	9.380	1.180	2.1	11.1315	0.0000	OK
Link Event (Velocity)		US Node	Link	Outflow (l/s)				
360 minute winter		S/A	Infiltration	0.6				