Appendix 4J

Rainwater Harvesting Tank Calculations

MWP	JOB NAME: Balinlee Wind Farm		PAGE No: 1
	SECTION: Standard Information		
	JOB No: 22635	DESIGNED: GJ	
	DATE: 03/06/2025	CHECKED: CMcL	

Ref:		Output

Greensource

Client:	Ballinlee Green Energy Project
Project Name:	Ballinlee Wind Farm
Project Location:	County Limerick

ITM Co-ordinates:

Easting:	559846.33
Northing:	635105.39

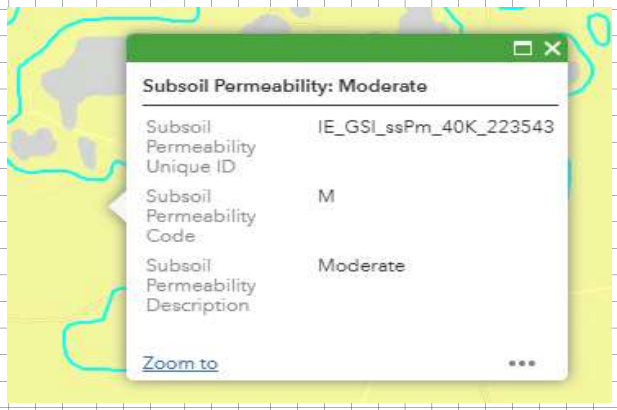
Irish Grid Co-ordinates:

Easting:	159887.19
Northing:	135056.93

Latitude:	52	deg	27	min	52.28087	
Longitude:	-8	deg	35	min	27.34041	

MWP

SAAR:	981	mm	Average Annual Rainfall model Ireland.dwg
			..\..\..\..\06 - Records Incoming\Incoming Public Services\Met Éireann
SOIL:	2	Type	FSR - Fig I 4_18 (1) [Soil] [ITM].dwg
SPR:	0.3		
GCF 1:	0.85		IH124 Hydrological Region 13
GCF 30:	1.65		GDSDS/GDR
GCF 100	1.95		



CALCULATION SOURCE

Calculations as per BS EN 16941-1:2024 € Section 6

MWP	JOB NAME: Balinlee Wind Farm		PAGE No: 2
	SECTION: Met Eireann Data		
	JOB No: 22635	DESIGNED: GJ	
	DATE: 03/06/2025	CHECKED: CMcL	

Ref:					Output	
AVAILABLE RAINWATER VOLUME						
Collection Area: $[A_i]$		100	m²	$[A_i]$	100
Surface Yield: $[e_i]$						
Yield Coefficient (if known):						
Yield Coefficient (if unknown):						
Surface Type:	Non-Sealed (e.g. Cobblestone)	0.5				
				$[e_i]$	0.5
Hydraulic Treatment Efficiency: $[\eta]$						
Manufacturer Specified:						
Default if Not Specified:		0.9		$[\eta]$	0.9
Total Rainfall Depth: $[h_i]$						
Chosen Timestep:		Annual				
Associated Rainfall Depth	Use SAAR	981	mm	$[h_i]$	981

$$Y_{R,t} = \sum (A_i e_i) h_t \eta$$

$Y_{R,t}$ = 44,145.00 l rainwater yield for Annual timestep

$Y_{R,t}$ = 44,145.00

MWP	JOB NAME: Balinlee Wind Farm		PAGE No: 3
	SECTION: Treatment		
	JOB No: 22635	DESIGNED: GJ	
	DATE: 03/06/2025	CHECKED: CMcL	

Ref:

RAINWATER STORAGE VOLUME FOR ANNUAL STEP

						Output
Annual Rainwater Yield:	$[V]$					
Dry Period Days:	$[d_d]$		18	days		
Rainwater Yield:	$[Y_{R,a}]$		44,145.00	litres		
Usable Capacity:	$V = Y_{R,a}(d_d \div 365)$		2,177.01	litres		
Annual Non-Potable Demand:	$[V]$					
Dry Period Days:	$[d_d]$		18	days		
Rainwater Yield:	$[D_{n,a}]$		109,500.00	litres		
Daily Personal Demand:		50	l / day			
Daily Non-Person Demand:		100	l / day			
Number of People:		4	people			
Number of Days inTimestep:		365	days			
Usable Capacity:	$V = D_{n,a}(d_d \div 365)$		5,400.00	litres		
Usable Storage Capacity for Tank Sizing:			2,177.01	litres	$[V]$ 2177 l	

TANK DIMENSIONS

Rectangular			*Circular*		
Length:	2.0	m	Diameter:	3.4	m
Width:	1.0	m			m
Plan Area:	2.0	m^2	Plan Area:	9.1	m^2
Volume:	2.2	m^3	Volume:	2.2	m^3
Depth:	1.09	m	Depth:	0.24	m