Design 4 MAX. Ballyphehane Community Centre, 51.884574, -8.474717

Report

Project Name	Ballyphehane Community Centre
Project Address	51.884574, -8.474717
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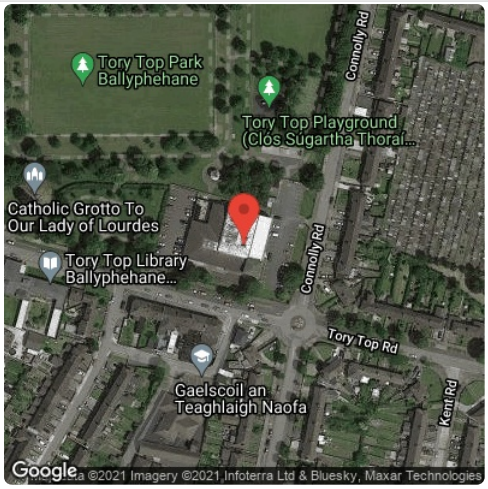
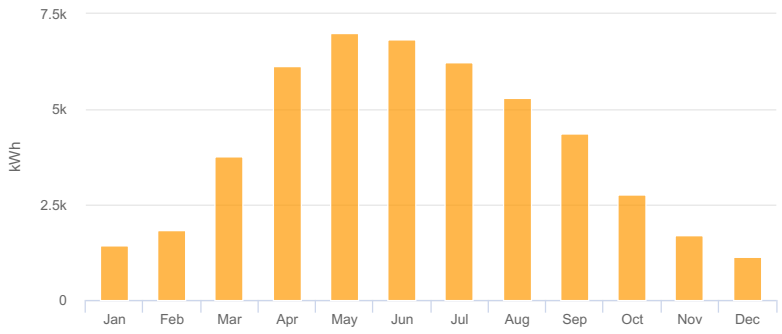
System Metrics

Design	Design 4 MAX.
Module DC Nameplate	61.9 kW
Inverter AC Nameplate	55.0 kW Load Ratio: 1.13
Annual Production	48.52 MWh
Performance Ratio	79.5%
kWh/kWp	783.5
Weather Dataset	TMY, 10km Grid, meteonorm (meteonorm)
Simulator Version	de7219c6cd-16a4103c89-1a188dc459-e0f52f71ff

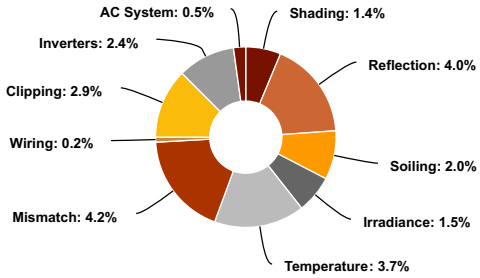
Project Location



Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	948.9	
	POA Irradiance	985.5	3.9%
	Shaded Irradiance	971.4	-1.4%
	Irradiance after Reflection	932.3	-4.0%
	Irradiance after Soiling	913.7	-2.0%
	Total Collector Irradiance	**913.7**	**0.0%**
Energy (kWh)	Nameplate	56,729.5	
	Output at Irradiance Levels	55,850.3	-1.5%
	Output at Cell Temperature Derate	53,780.5	-3.7%
	Output After Mismatch	51,507.6	-4.2%
	Optimal DC Output	51,401.4	-0.2%
	Constrained DC Output	49,934.8	-2.9%
	Inverter Output	48,759.8	-2.4%
	Energy to Grid	**48,516.0**	**-0.5%**
Temperature Metrics			
	Avg. Operating Ambient Temp		11.6 °C
	Avg. Operating Cell Temp		21.3 °C
Simulation Metrics			
	Operating Hours		4612
	Solved Hours		4612

Condition Set

Description	Condition Set 1											
Weather Dataset	TMY, 10km Grid, meteonorm (meteonorm)											
Solar Angle Location	Meteo Lat/Lng											
Transposition Model	Perez Model											
Temperature Model	Sandia Model											
Temperature Model Parameters	Rack Type	a	b	Temperature Delta								
	Fixed Tilt	-3.56	-0.075	3°C								
	Flush Mount	-2.81	-0.0455	0°C								
Soiling (%)	J	F	M	A	M	J	J	A	S	O	N	D
	2	2	2	2	2	2	2	2	2	2	2	2
Irradiation Variance	5%											
Cell Temperature Spread	4° C											
Module Binning Range	-2.5% to 2.5%											
AC System Derate	0.50%											
Module Characterizations	Module	Uploaded By	Characterization									
	M.60-B-360 (Solitek)	Folsom Labs	Spec Sheet Characterization, PAN									
Component Characterizations	Device	Uploaded By	Characterization									

Components

Component	Name	Count
Inverters	Sunny Mini Central SMC 11000TL-10 (SMA)	5 (55.0 kW)
Strings	10 AWG (Copper)	15 (331.9 m)
Module	Solitek, M.60-B-360 (360W)	172 (61.9 kW)

Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	-	10-14	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Field Segment 2A	Flush Mount	Portrait (Vertical)	12°	104.687416°	0.0 m	1x1	105	35	12.6 kW
Field Segment 2B	Flush Mount	Portrait (Vertical)	12°	284.6874°	0.0 m	1x1	96	0	0
P1	Flush Mount	Portrait (Vertical)	20°	284.65674°	0.0 m	1x1	4	0	0
P4	Flush Mount	Portrait (Vertical)	20°	14.755842°	0.0 m	1x1	3	0	0
P2	Flush Mount	Portrait (Vertical)	20°	195.13983°	0.0 m	1x1	2	0	0
P3	Flush Mount	Portrait (Vertical)	20°	104.03625°	0.0 m	1x1	2	0	0
Field Segment 1	Flush Mount	Portrait (Vertical)	20°	194.93141°	0.0 m	1x1	169	57	20.5 kW
Field Segment 3	Flush Mount	Portrait (Vertical)	20°	284.74356°	0.0 m	1x1	87	44	15.8 kW
Field Segment 4	Flush Mount	Landscape (Horizontal)	15°	104.31793°	0.0 m	1x1	127	36	13.0 kW

Detailed Layout