

Detailed Design Rev A - 13.9kw

MMU - Student Union Building Rev A, Manchester M15 6GX, UK

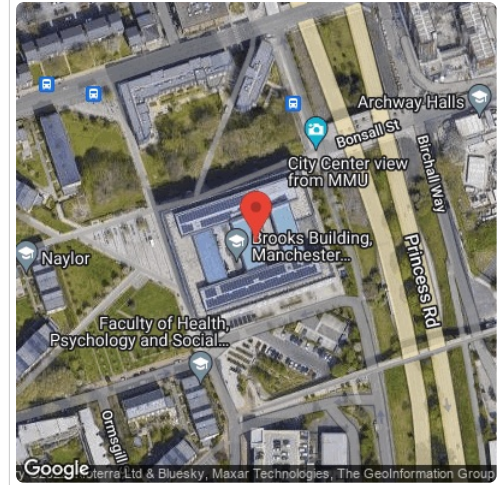
Report

Project Name	MMU - Student Union Building Rev A
Project Address	Manchester M15 6GX, UK
Prepared By	Nep Shaek nep.shaek@cor-energy.co.uk

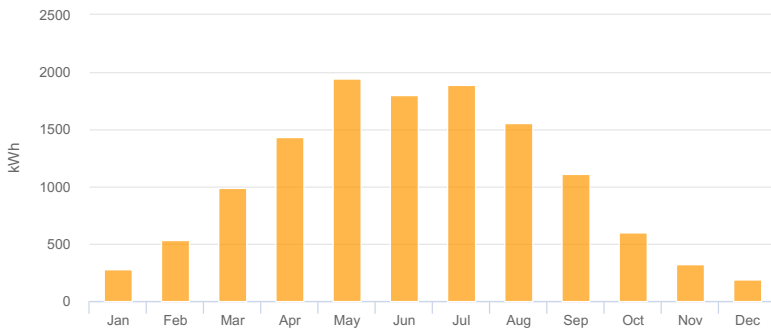
System Metrics

Design	Detailed Design Rev A - 13.9kw
Module DC Nameplate	14.3 kW
Inverter AC Nameplate	10.00 kW Load Ratio: 1.43
Annual Production	12.61 MWh
Performance Ratio	83.2%
kWh/kWp	885.2
Weather Dataset	TMY, 10km Grid, meteonorm/nasa low resolution (meteonorm)
Simulator Version	ada662d322-df0e856433-c90e500374-981fef9d56

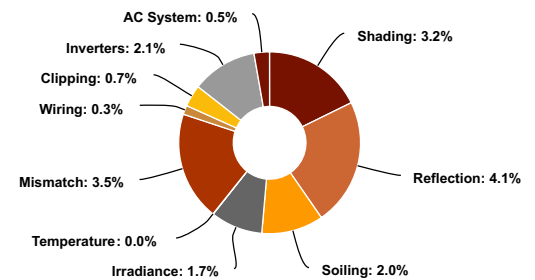
Project Location



Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m ²)	Annual Global Horizontal Irradiance	986.7	
	POA Irradiance	1,063.9	7.8%
	Shaded Irradiance	1,029.7	-3.2%
	Irradiance after Reflection	987.4	-4.1%
	Irradiance after Soiling	967.7	-2.0%
	Total Collector Irradiance	967.6	0.0%
Energy (kWh)	Nameplate	13,791.8	
	Output at Irradiance Levels	13,559.5	-1.7%
	Output at Cell Temperature Derate	13,558.3	0.0%
	Output After Mismatch	13,081.7	-3.5%
	Optimal DC Output	13,043.5	-0.3%
	Constrained DC Output	12,951.5	-0.7%
	Inverter Output	12,677.6	-2.1%
	Energy to Grid	12,614.2	-0.5%
Temperature Metrics			
	Avg. Operating Ambient Temp		12.3 °C
	Avg. Operating Cell Temp		17.4 °C
Simulation Metrics			
	Operating Hours	4584	
	Solved Hours	4584	

Condition Set

Description	Condition Set 1											
Weather Dataset	TMY, 10km Grid, meteonorm/nasa low resolution (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								
	LR4-60HIH-375M (Longi)	HelioScope		Spec Sheet Characterization, PAN								
Component Characterizations	Device	Uploaded By		Characterization								

Components		
Component	Name	Count
Inverters	S5-GR3P10K (400V) (Solis)	1 (10.00 kW)
Strings	4 mm2 (Copper)	3 (73.9 m)
Module	Longi, LR4-60HIH-375M (375W)	38 (14.3 kW)

Wiring Zones			
Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	-	3-13	Along Racking

Field Segments									
Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Field Segment 1	Fixed Tilt	Landscape (Horizontal)	10°	152.34628°	0.5 m	1x1	38	38	14.3 kW

