

Detailed Design Rev A2 MMU - Warde Halls, M15 6GR

Report

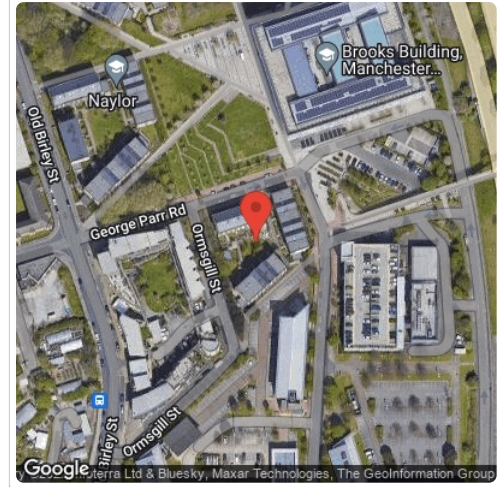
Project Name	MMU - Warde Halls
Project Address	M15 6GR
Prepared By	Nep Shaek nep.shaek@cor-energy.co.uk



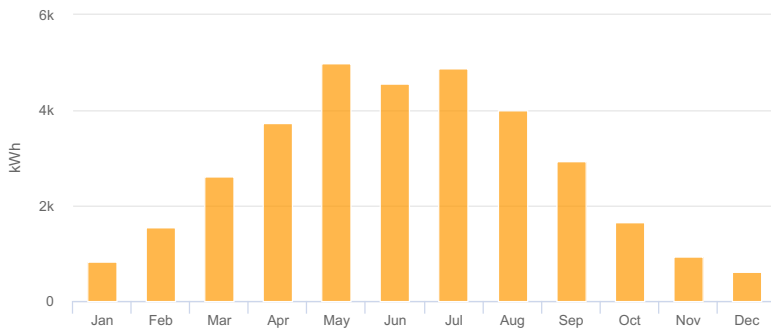
System Metrics

Design	Detailed Design Rev A2
Module DC Nameplate	38.3 kW
Inverter AC Nameplate	32.0 kW Load Ratio: 1.20
Annual Production	33.31 MWh
Performance Ratio	77.8%
kWh/kWp	870.7
Weather Dataset	TMY, 10km Grid, meteonorm/nasa low resolution (meteonorm)
Simulator Version	6d631a840a-5f7ded908c-38381c2dbb-6ef8d412e1

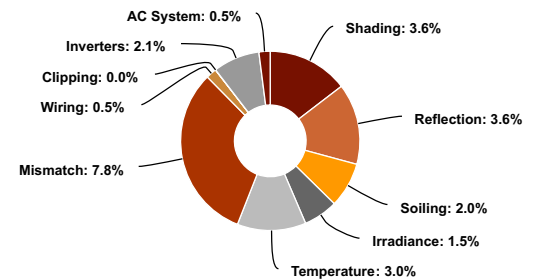
Project Location



Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m ²)	Annual Global Horizontal Irradiance	986.7	
	POA Irradiance	1,119.1	13.4%
	Shaded Irradiance	1,078.9	-3.6%
	Irradiance after Reflection	1,040.2	-3.6%
	Irradiance after Soiling	1,019.4	-2.0%
	Total Collector Irradiance	1,019.7	0.0%
Energy (kWh)	Nameplate	39,006.3	
	Output at Irradiance Levels	38,411.3	-1.5%
	Output at Cell Temperature Derate	37,239.8	-3.0%
	Output After Mismatch	34,342.2	-7.8%
	Optimal DC Output	34,181.3	-0.5%
	Constrained DC Output	34,177.8	0.0%
	Inverter Output	33,473.0	-2.1%
	Energy to Grid	33,305.6	-0.5%
Temperature Metrics			
	Avg. Operating Ambient Temp		12.3 °C
	Avg. Operating Cell Temp		21.1 °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)	2 (20.0 kW)
Inverters	S5-GR3P12K (400V) (Solis)	1 (12.0 kW)
Strings	4 mm2 (Copper)	6 (253.5 m)
Module	Longi, LR4-60HIH-375M (375W)	102 (38.3 kW)

Wiring Zones			
Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	-	5-24	Along Racking
Wiring Zone 2	-	5-24	Along Racking
Wiring Zone 3	-	5-24	Along Racking

Field Segments									
Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Field Segment 1	Fixed Tilt	Landscape (Horizontal)	10°	227.37495°	0.5 m	1x1	36	22	8.25 kW
Field Segment 2	Flush Mount	Portrait (Vertical)	35°	228.24614°	0.5 m	1x1	15	6	2.25 kW
Field Segment 3	Flush Mount	Landscape (Horizontal)	35°	48.14113°	0.5 m	1x1	0	0	0
Field Segment 4	Flush Mount	Portrait (Vertical)	35°	227.76678°	0.5 m	1x1	14	6	2.25 kW
Field Segment 5	Flush Mount	Landscape (Horizontal)	35°	47.511433°	0.5 m	1x1	0	0	0
Field Segment 6	Flush Mount	Portrait (Vertical)	30°	162.36554°	0.0 m	1x1	38	28	10.5 kW
Field Segment 7	Flush Mount	Portrait (Vertical)	30°	342.33533°	0.0 m	1x1	19	0	0
Field Segment 8	Fixed Tilt	Landscape (Horizontal)	10°	162.55281°	0.5 m	1x1	36	22	8.25 kW
Field Segment 14	Flush Mount	Landscape (Horizontal)	35°	341.87814°	0.0 m	1x1	0	0	0
Field Segment 13	Flush Mount	Portrait (Vertical)	35°	161.80246°	0.0 m	1x1	8	6	2.25 kW
Field Segment 12	Flush Mount	Landscape (Horizontal)	35°	342.23795°	0.0 m	1x1	0	0	0
Field Segment 11	Flush Mount	Portrait (Vertical)	35°	162.16275°	0.0 m	1x1	8	6	2.25 kW
Field Segment 10	Flush Mount	Landscape (Horizontal)	35°	341.468°	0.0 m	1x1	0	0	0
Field Segment 9	Flush Mount	Portrait (Vertical)	35°	161.40228°	0.0 m	1x1	8	6	2.25 kW

Detailed Layout

