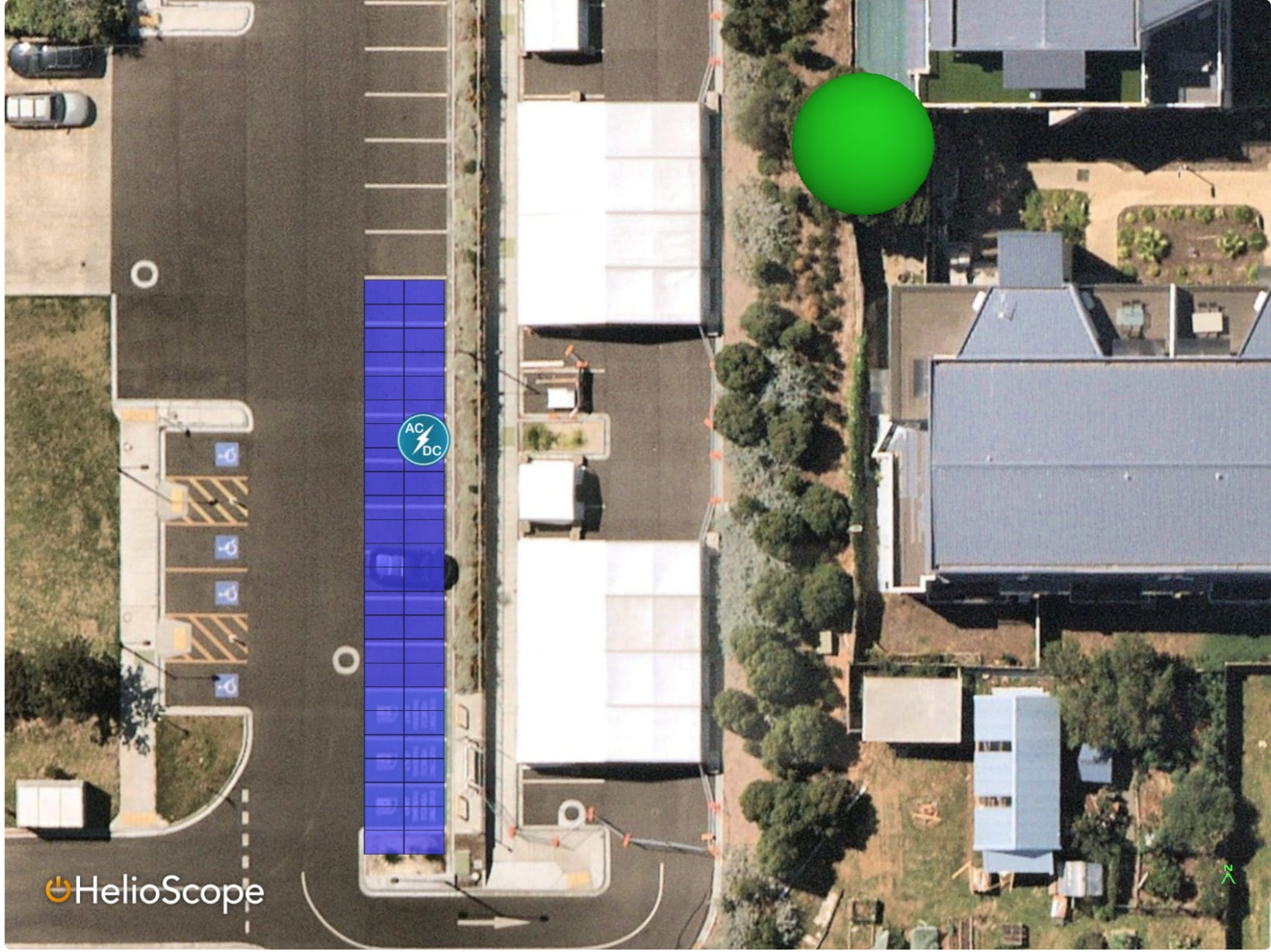


Detailed Layout



Solar carpark (125kW) Cowes Transit Centre, Cowes Transit Centre/Church St, Cowes VIC

Report

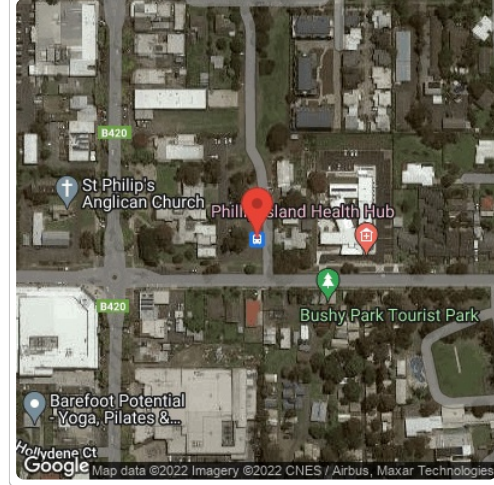
Project Name	Cowes Transit Centre
Project Address	Cowes Transit Centre/Church St, Cowes VIC
Prepared By	Middleton Group roger.brown@middletongroup.com.au



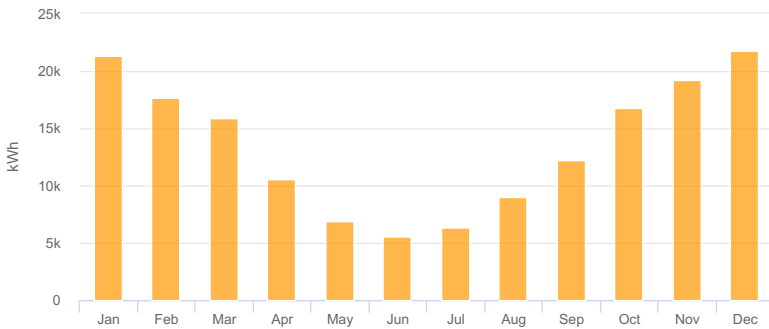
System Metrics

Design	Solar carpark (125kW)
Module DC Nameplate	124.8 kW
Inverter AC Nameplate	100.0 kW Load Ratio: 1.25
Annual Production	163.2 MWh
Performance Ratio	84.3%
kWh/kWp	1,307.4
Weather Dataset	TMY, 10km Grid, meteonorm (meteonorm)
Simulator Version	26c513b886-2f17bc8804-b418a4e336-5b608c73c1

Project Location

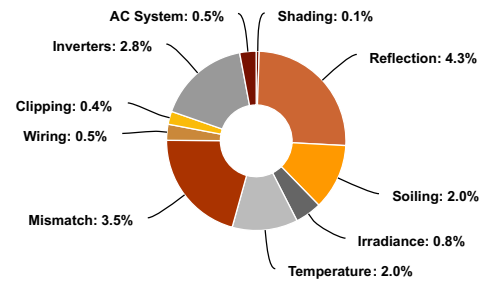


Monthly Production



Month	GHI (kWh/m ²)	POA (kWh/m ²)	Shaded (kWh/m ²)	Nameplate (kWh)	Grid (kWh)
January	205.2	205.2	205.0	24,227.5	21,317.6
February	168.3	168.3	168.2	19,795.6	17,645.7
March	150.8	150.8	150.6	17,659.2	15,849.8
April	100.2	100.2	100.1	11,620.8	10,589.1
May	65.8	65.8	65.7	7,539.0	6,920.8
June	53.1	53.1	53.1	6,028.9	5,568.3
July	59.6	59.6	59.5	6,788.7	6,286.6
August	84.2	84.2	84.1	9,733.5	8,988.9
September	114.4	114.4	114.3	13,328.5	12,220.4
October	157.3	157.3	157.2	18,496.1	16,811.5
November	182.8	182.8	182.7	21,536.1	19,178.2
December	209.0	209.0	208.9	24,665.4	21,785.1

Sources of System Loss



⚡ Annual Production			
	Description	Output	% Delta
Irradiance (kWh/m ²)	Annual Global Horizontal Irradiance	1,550.8	
	POA Irradiance	1,550.8	0.0%
	Shaded Irradiance	1,549.4	-0.1%
	Irradiance after Reflection	1,483.4	-4.3%
	Irradiance after Soiling	1,453.7	-2.0%
	Total Collector Irradiance	1,453.7	0.0%
Energy (kWh)	Nameplate	181,419.3	
	Output at Irradiance Levels	179,962.7	-0.8%
	Output at Cell Temperature Derate	176,378.6	-2.0%
	Output After Mismatch	170,213.6	-3.5%
	Optimal DC Output	169,392.5	-0.5%
	Constrained DC Output	168,724.8	-0.4%
	Inverter Output	163,981.9	-2.8%
	Energy to Grid	163,161.9	-0.5%
Temperature Metrics			
	Avg. Operating Ambient Temp		16.3 °C
	Avg. Operating Cell Temp		23.8 °C
Simulation Metrics			
	Operating Hours		4565
	Solved Hours		4565

☁ 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%										
Trackers	Maximum Angle								Backtracking			
	60°								Enabled			
Module Characterizations	Module						Uploaded By		Characterization			
	TSM-DE20-600 (Trina Solar)						HelioScope		Spec Sheet Characterization, PAN			
Component Characterizations		Device		Uploaded By				Characterization				

📦 Components		
Component	Name	Count
Inverters	SG25CX-SA (Sungrow)	4 (100.0 kW)
Strings	10 AWG (Copper)	12 (255.3 m)
Module	Trina Solar, TSM-DE20-600 (600W)	208 (124.8 kW)

🔌 Wiring Zones			
Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	-	6-25	Along Racking

🏠 Field Segments									
Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Solar carpark	Carport	Landscape (Horizontal)	0°	0°	0.0 m	2x1	76	152	91.2 kW
Solar carpark (copy)	Carport	Landscape (Horizontal)	0°	0°	0.0 m	2x1	28	56	33.6 kW

Detailed Layout



Creating a sustainable energy future for our communities

Strategic consulting for



Industrial



Power utilities



Renewables



Water



Transport

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