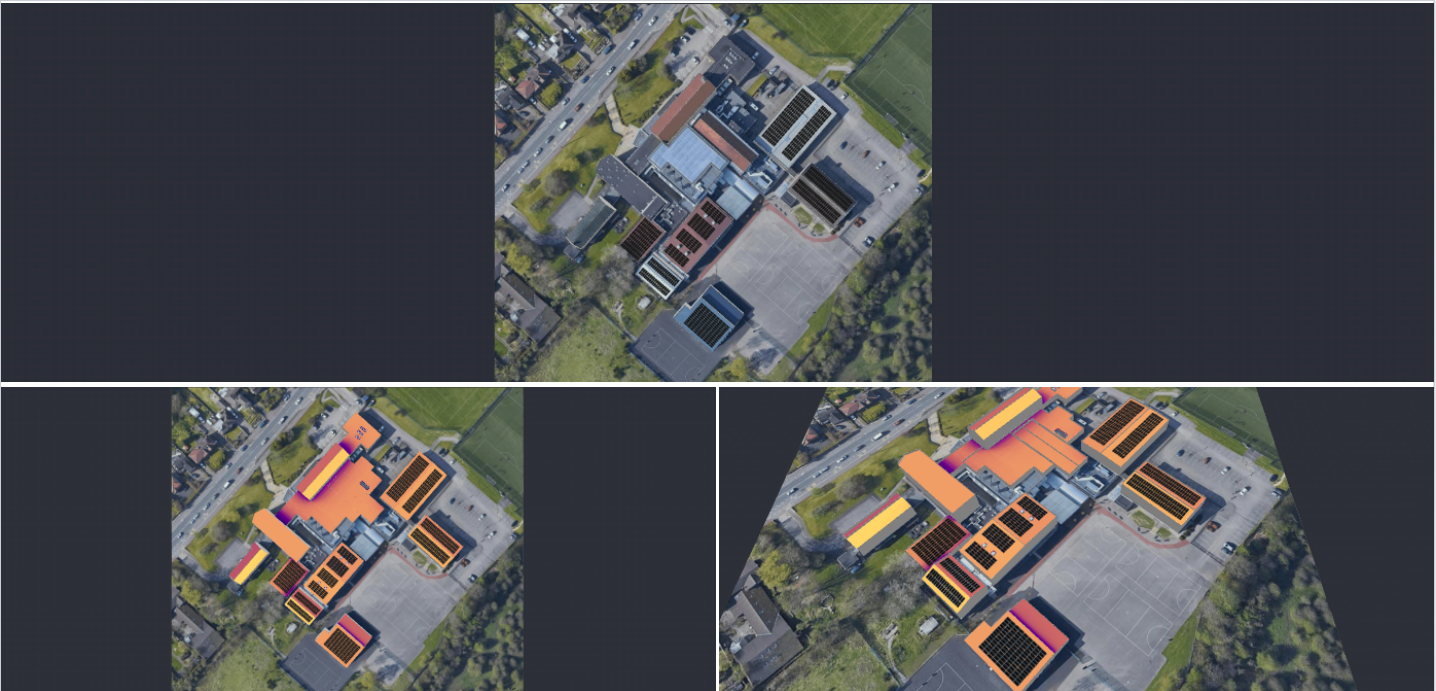


CARDINAL LANGLEY RC HIGH SCHOOL

Rochdale Road 1, Middleton, M24 2GL, United Kingdom | 18 Jul 2025



SYSTEM OVERVIEW

 788 PV modules

 4 Inverters

 788 Optimizers

SIMULATION RESULTS



Installed DC Power

362.48 kWp



Max Achieved AC Power

266.40 kW



Annual Usable Solar Production

317.82 MWh



Annual CO₂ Emission Saved

61.46 t



Annual Equivalent Trees Planted

2,823



Max Achieved DC Power

313.63 kW



DC/AC Oversizing

118 %



Max Active AC Power

266.40 kW



Performance Ratio

89 %



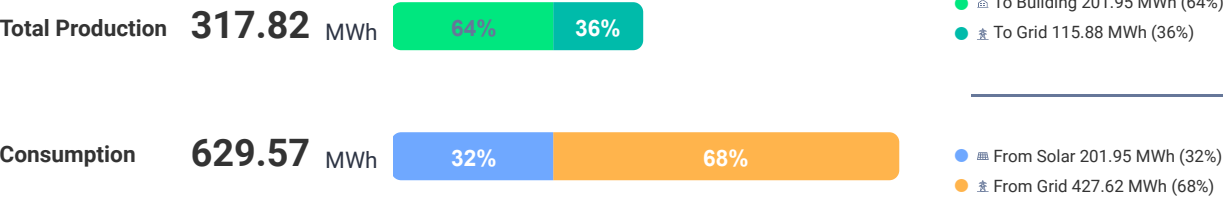
Annual Specific Production

877 kWh/kWp

CARDINAL LANGLEY RC HIGH SCHOOL

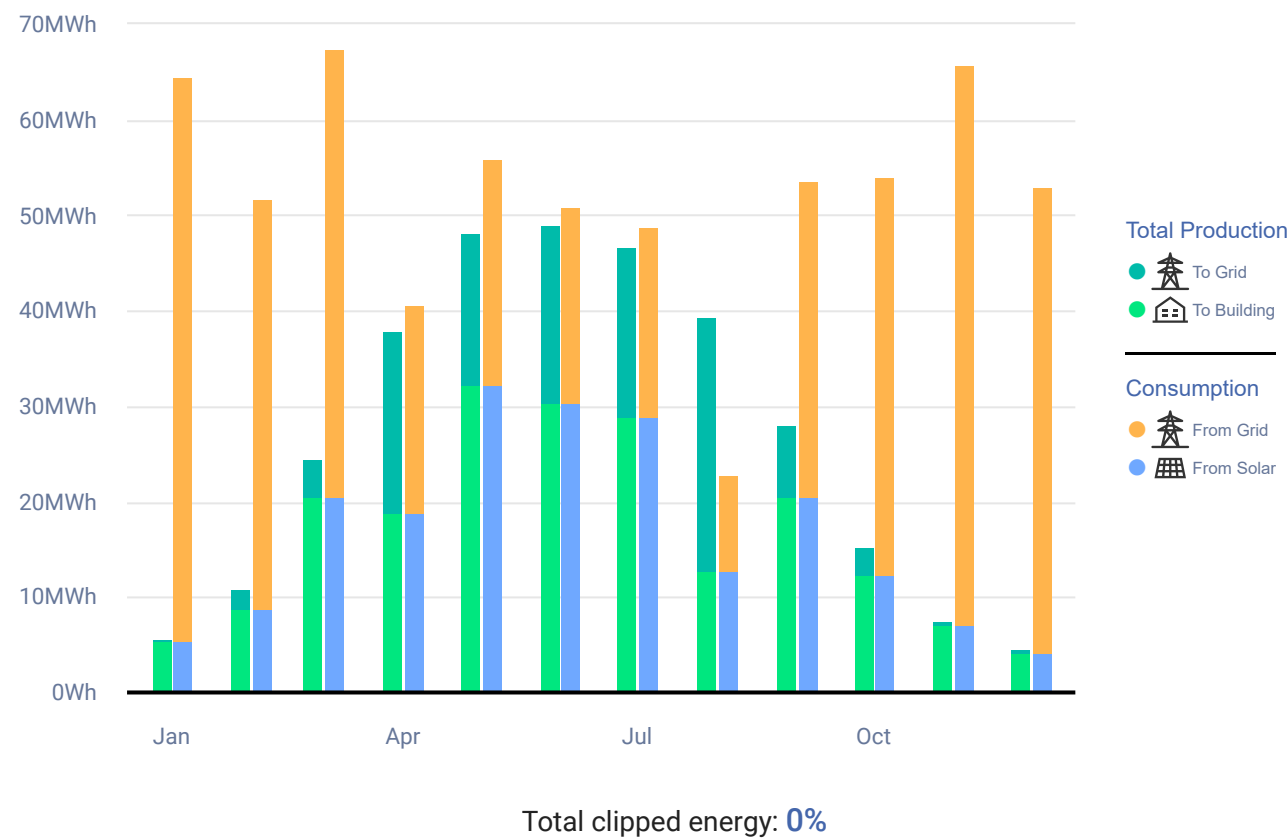
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ANNUAL CONSUMPTION AND PRODUCTION RESULTS



CARDINAL LANGLEY RC HIGH SCHOOL
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ESTIMATED MONTHLY ENERGY



Month	Production (kWh)	To Home (kWh)	To Grid (kWh)	Consumption (kWh)	From PV (kWh)	From Grid (kWh)
Jan	5,679	5,402	277	64,469	5,402	59,067
Feb	10,909	8,881	2,028	51,802	8,881	42,921
Mar	24,568	20,451	4,117	67,465	20,451	47,014
Apr	37,925	18,959	18,966	40,602	18,959	21,643
May	48,256	32,204	16,053	56,059	32,204	23,855
Jun	49,104	30,395	18,709	50,902	30,395	20,507
Jul	46,725	28,829	17,896	48,783	28,829	19,954
Aug	39,379	12,682	26,697	22,910	12,682	10,229
Sep	27,995	20,502	7,493	53,560	20,502	33,058
Oct	15,236	12,326	2,910	54,043	12,326	41,717
Nov	7,540	7,025	515	65,889	7,025	58,865
Dec	4,508	4,292	216	53,082	4,292	48,790

CARDINAL LANGLEY RC HIGH SCHOOL

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PV MODULES

# Module	Model	Peak power	Racking type	Orientation	Azimuth	Tilt
34	JA Solar, JAM72S20-460/MR (1500V)	15.6 kWp			41°	17°
216	JA Solar, JAM72S20-460/MR (1500V)	99.4 kWp			180°	0°
34	JA Solar, JAM72S20-460/MR (1500V)	15.6 kWp			221°	17°
66	JA Solar, JAM72S20-460/MR (1500V)	30.4 kWp			221°	4°
78	JA Solar, JAM72S20-460/MR (1500V)	35.9 kWp			42°	7°
78	JA Solar, JAM72S20-460/MR (1500V)	35.9 kWp			222°	7°
90	JA Solar, JAM72S20-460/MR (1500V)	41.4 kWp			131°	3°
120	JA Solar, JAM72S20-460/MR (1500V)	55.2 kWp			311°	3°
72	JA Solar, JAM72S20-460/MR (1500V)	33.1 kWp			41°	4°
Total: 788		362.5 kWp				

BILL OF MATERIALS (BOM)

Items	Part Number	Quantity	Price (£)	Total (£)
 SE66.6K Synergy Manager		4		
 S1000		788		
 JAM72S20-460/MR (1500V)		788	0.00	0.00

CARDINAL LANGLEY RC HIGH SCHOOL

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ELECTRICAL DESIGN

Inverters & Storage	Strings per inverter	Optimizers per string	PV modules per string
1 xSE66.6K Synergy Manager Center Unit 78.89kW 118% Oversizing	1 x string	22 x S1000	22
	2 x strings	26 x S1000	26
	1 x string	27 x S1000	27
	Left Unit		
	3 x strings	24 x S1000	24
	1 x string	26 x S1000	26
	1 x string	26 x S1000	26
	3 x strings	25 x S1000	25
	Left Unit		
1 xSE66.6K Synergy Manager Center Unit 78.68kW 118% Oversizing	1 x string	26 x S1000	26
	3 x strings	25 x S1000	25
	Left Unit		
	3 x strings	24 x S1000	24
	1 x string	28 x S1000	28
	1 x string	24 x S1000	24
	2 x strings	23 x S1000	23
	1 x string	26 x S1000	26
	Left Unit		
1 xSE66.6K Synergy Manager Center Unit 78.17kW 117% Oversizing	1 x string	24 x S1000	24
	2 x strings	23 x S1000	23
	1 x string	26 x S1000	26
	Left Unit		
	2 x strings	24 x S1000	24
	1 x string	23 x S1000	23
	1 x string	25 x S1000	25
	2 x strings	24 x S1000	24
	1 x string	23 x S1000	23

CARDINAL LANGLEY RC HIGH SCHOOL

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ELECTRICAL DESIGN (CONTINUED)

Inverters & Storage	Strings per inverter	Optimizers per string	PV modules per string
 1 xSE66.6K Synergy Manager 77.9kW 117% Oversizing	Center Unit		
	3 x strings	24 x S1000	24
	1 x string	25 x S1000	25
	Left Unit		
	3 x strings	24 x S1000	24
	1 x string	27 x S1000	27

SYSTEM LOSS DIAGRAM



CARDINAL LANGLEY RC HIGH SCHOOL

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SIMULATION PARAMETERS



LOCATION & GRID

Time zone	BST (London)
Weather station	Manchester-Ringway (24 km away)
Station altitude	69 m
Station data source	Meteonorm 8.2
Grid	400V L-L, 230V L-N



LOSS FACTORS

Near shading	Enabled
Albedo	0.20
Bi-Facial Albedo	0.30
Soiling/Snow	0%
Incidence angle modifier (IAM), ASHRAE b0 param.	0.05
Thermal loss factor U_c (const) Flush mount	20
Thermal loss factor U_c (const) Tilted	29
LID loss factor	0%
System unavailability	0%