

259.675kW SOLAR SYSTEM

ADDRESSED TO:

Manchester Communications Academy

Manchester Communications Academy/Silchester Drive
Manchester M9 5QN
England

Prepared by Carl Hutchinson on Jan 7, 2023
Last updated on Mar 21, 2023

Address

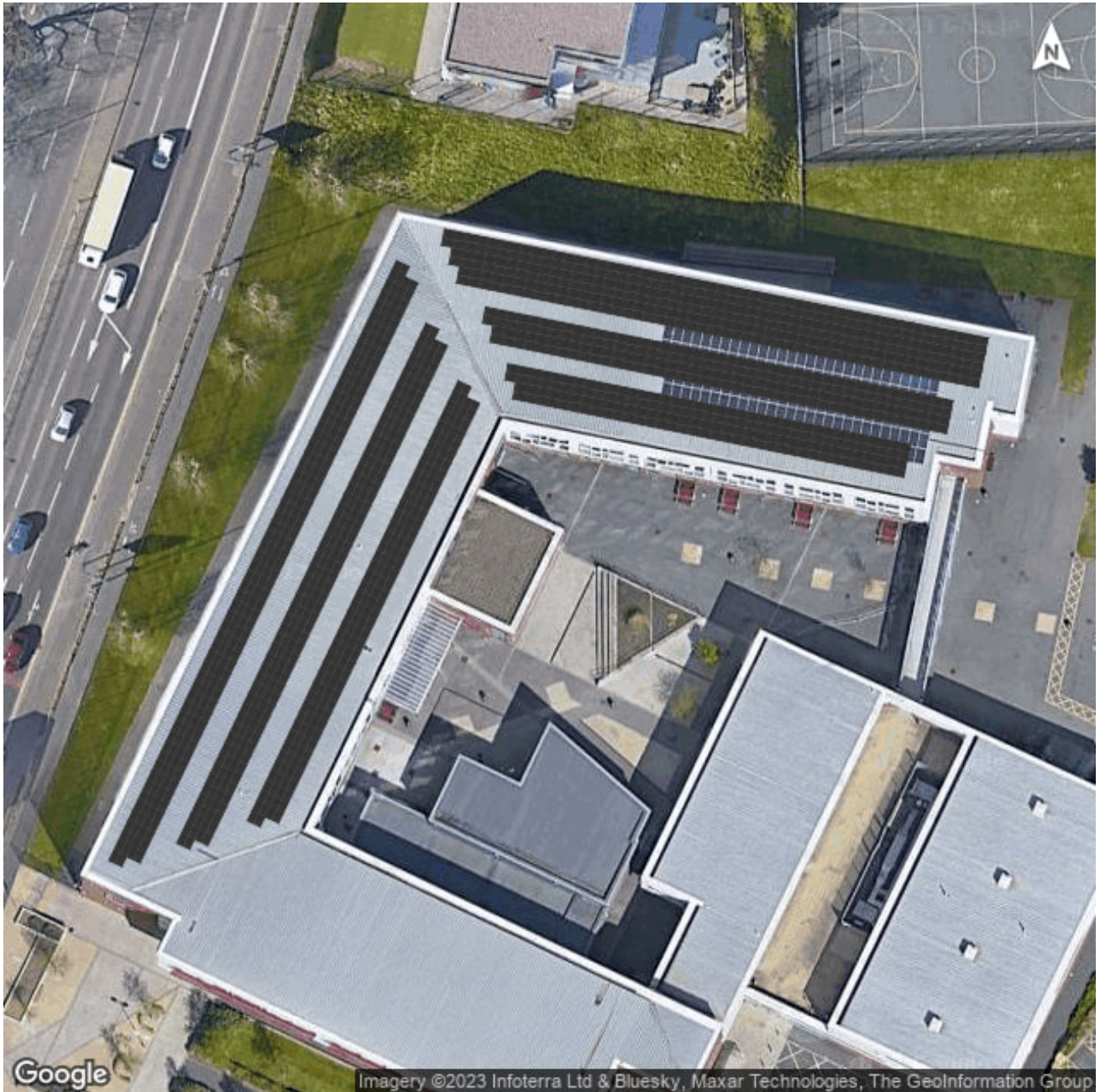
Energy Intelligence Ltd
19-33 South Promenade
Lytham St Annes, Lancashire
FY8 1LX

Phone

Phone: 0161 694 6190

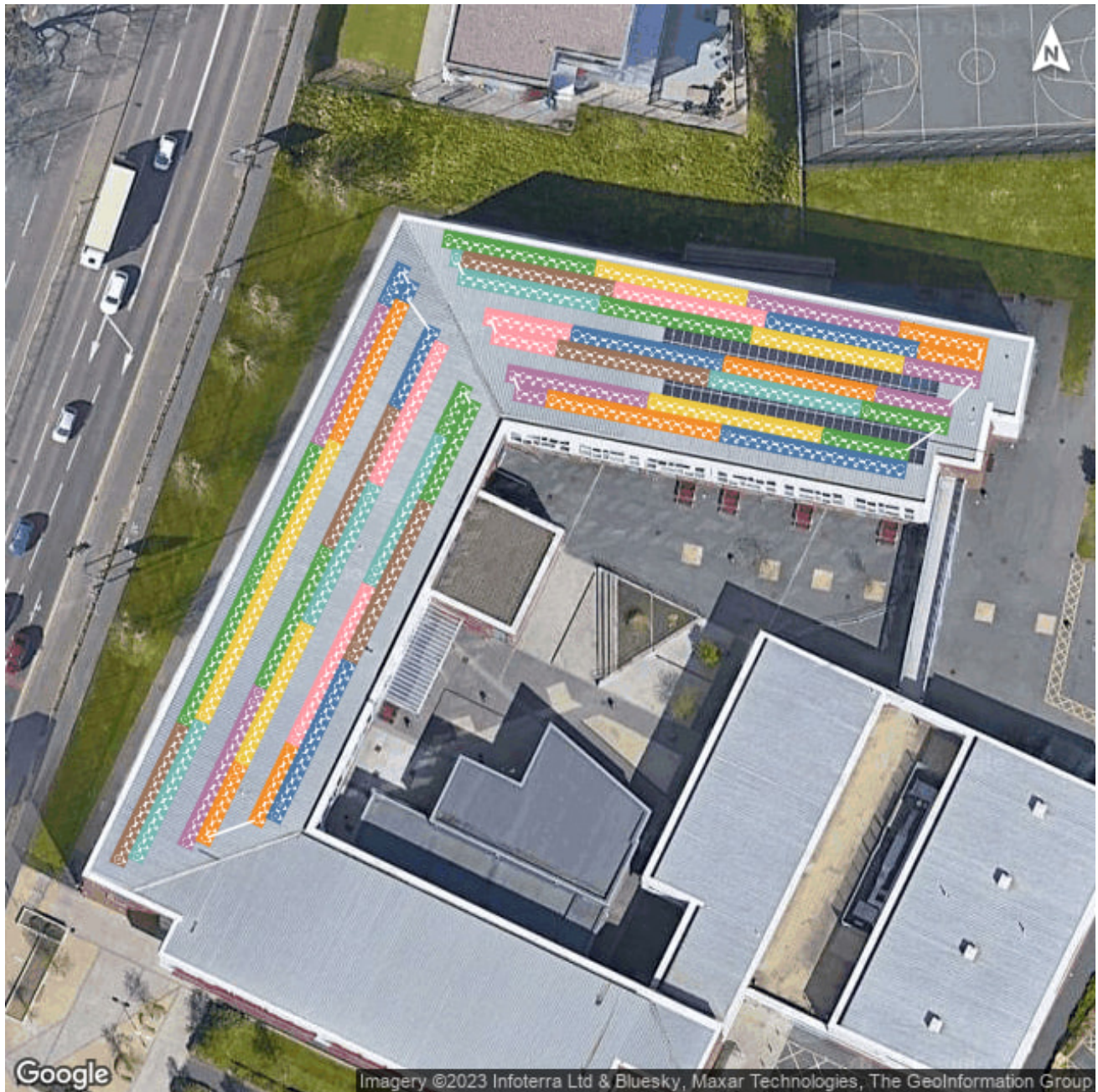
Online

Email: projects@energyintelligencegroup.com
Website: <http://www.energyintelligencegroup.com>



PROPOSED PANEL LAYOUT

Silchester Drive,
Manchester
England M9 5QN



PANEL STRINGS & COMPONENT MARKINGS

SYSTEM DETAILS

Your custom design

259.675
kW_{DC}
System size (STC)¹

193 MWh
Estimated annual
production²

87%
System efficiency³

SOLAR PANEL

611 × 425W Trina Solar Vertex S - TSM-425DE09R.08

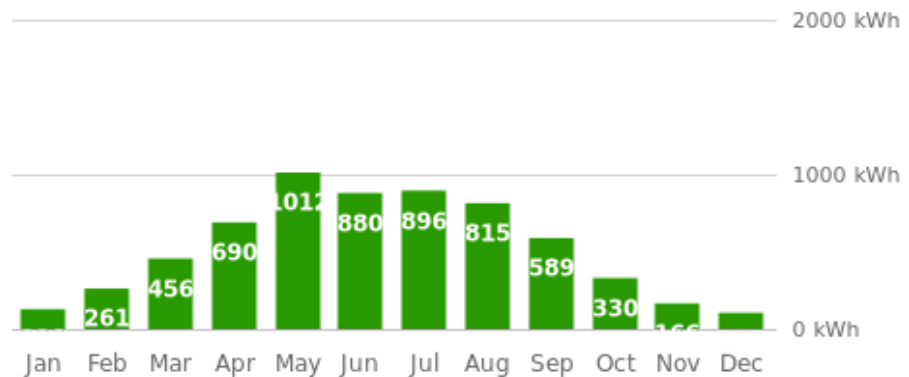
1764 mm × 1134 mm · Monocrystalline · [Datasheet](#) · [Warranty](#)

INVERTER

2 × SMA STP 110-60 · 11000W

Three phase · 98.6% maximum efficiency · [Datasheet](#) · [Manual](#) · [Warranty](#)DAILY
PRODUCTION PER
MONTH

How much electricity will
my system generate per
day, on average?



UTILITY COSTS

How much will I save after
installing solar?

BEFORE SOLAR

£7,846.72
Average monthly bill

£94,160.59
Annual bill

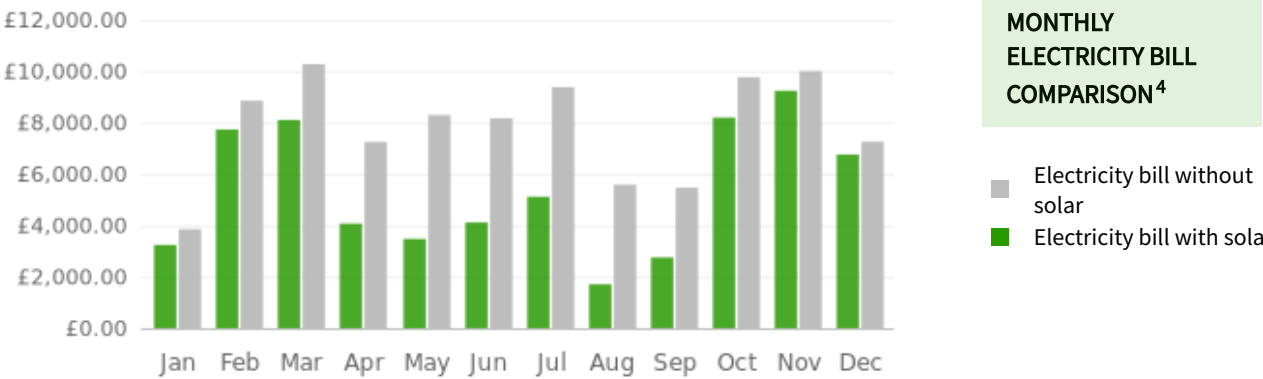
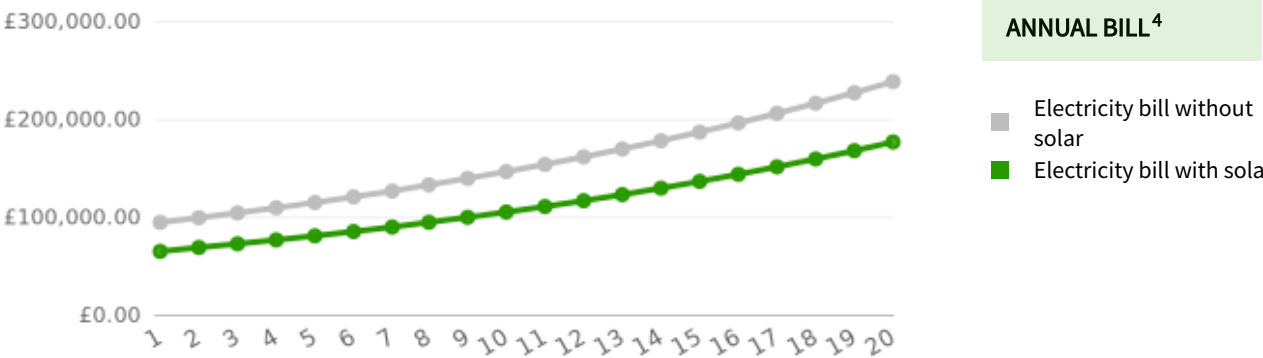
WITH SOLAR

£5,375.75 ↓ 31%
First year average

£64,508.96 ↓ 31%
Estimated annual savings £29,651.63

FINANCIAL ANALYSIS

Your historical electricity bills were used to help size your solar system. Based upon the system size suggested, the expected electricity bill savings over a 20 year period are provided below. In addition, the first-year electricity bill savings you can expect are provided together with a chart of the monthly solar system output you can expect.



ENVIRONMENTAL ANALYSIS

Your solar system will generate significant environmental benefits. These come primarily from avoided power plant emissions.



TREES PLANTED EQUIVALENT

—
3509 trees per year⁵



AVOIDED EQUIVALENT FUEL

—
58299 litres of petrol
per year⁵



AVOIDED COAL BURNT

—
66257 kg of coal per
year⁵



**ADDITIONAL
INFORMATION**

Power phases
Three phase

-

ASSUMED VALUES

-	DC Array Power Tilt Azimuth 129.625kW 5° 12° 130.05kW 30° 295° Azimuth measured clockwise from South	Monthly electric bills
	System efficiency³ 87%	Utility rate inflation 5% per annum
	AC system size 220kW	Self-consumption rate 72%
	Export limit No export limit	Daily supply charge £1.00
		Current electricity price £0.19
		Smart Export Guarantee read more £0.06
	System lifetime 20 year	PV degradation Trina Solar Vertex S TSM-425DE09R.08 98% for the first year -0.55% per year to year 25

ASSUMPTIONS AND DISCLAIMER

- ¹ The Standard Test Condition rating (STC) assumes a standard set of optimal operating conditions (25°C cell temperature, 1000 W/m² and an air mass of 1.5). The STC rating is most often used by manufacturers to classify the power output of PV modules. To calculate the system's energy production for any future year, the expected degradation in system performance is included (See "PV degradation", in table below).
 - ² Energy Output is calculated based on historical solar irradiance at the given location. A typical meteorological year is selected using statistical methods. Factors including panel tilt, orientation (azimuth), and system efficiency are taken into account.
 - ³ System efficiency is estimated to account for losses caused by a variety of factors. These factors include intermittent shading, cable losses, dirt, scheduled downtime, manufacturer tolerances, inverter efficiency for DC to AC (this does not affect off-grid DC only systems), battery round trip efficiency, and other factors.
 - ⁴ Utility electricity price inflation is adjusted based on the given location.
 - ⁵ United States Environmental Protection Agency. 2017. Greenhouse Gases Equivalencies Calculator - Calculations and References. [ONLINE] Available at: <https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references#kilowatt>.
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Note The system design may change based on a detailed site audit. Estimated savings are based on past electrical usage and utility rates provided by the customer where applicable. Actual system production and savings will vary based on final system design, configuration, utility rates, applicable subsidies and your energy usage post-solar installation. Utility rates, charges and fee structures imposed by your utility are not affected by this proposal and are subject to change in the future at the discretion of your utility. The production calculations in this report are based on historical climate data for the site location and represent typical estimates of future solar production.



WARRANTY

Product	Type	Standard warranty	Downloads
Trina Solar Vertex S TSM-425DE09R.08 425W	Solar panel	25 years product, 25 years performance	Warranty file
SMA STP 110-60 110000W	Inverter	5 years	Warranty file