Gamma case study

Gamma Telecom operates a high-demand data centre at Trafford Park, Manchester, where continuous uptime and energy performance are critical. With annual electricity consumption approaching 3 million kWh, they required a solar PV system that could deliver reliable on-site generation without impacting operations.

We were appointed to deliver a full turnkey solution, covering consultation, design, supply, installation and ongoing maintenance.

System Design & Specification

Gamma's site uses two on-site generators to provide redundancy if there is ever a power failure. In addition, a UPS battery system supplies power instantly during an outage, covering the short transition period before the generators start. Because of this, meticulous planning was needed for the installation, as a full electrical shutdown was not possible.

To protect the site and comply with electrical regulations, we had to ensure the solar PV system would automatically shut down if either generator started. However, space inside the PV distribution board was limited, and it had to accommodate a connection to the fire alarm system. To solve this, instead of running multiple control cables, we connected the PV system directly to the generator's automatic changeover switch using a FP200 fire proof cable. This also allowed the fire alarm CAT 5 cable to be connected in series. Both signals were terminated at a motorised MCCB within the PV distribution board, creating a loop system so if either the generator or the fire alarm is triggered, the loop opens and the PV system shuts down. The result was a fully compliant solar PV installation that integrates with the data centre's power systems.

The array comprises a 250.88 kWp grid-connected solar PV system, installed across multiple roof orientations to maximise the space while maintaining performance. The system includes 392 LONGi 640W monocrystalline modules, delivering high efficiency and long-term reliability, supported by a 25-year panel warranty.

Power conversion is handled by two Solis 100K 5G Pro inverters, which we selected for their commercial-grade performance, multiple MPPT inputs and extended 10-year warranty.

Gamma case study

Installation & Delivery

Delivering the installation on a live data-centre site required a carefully managed approach, with safety and coordination as the overriding priorities. From the start, we planned the works to ensure zero disruption to Gamma, with all activity organised around site access protocols and their day-to-day operations.

The installation followed completion of detailed structural surveys, AC design and DNO applications, ensuring the system was fully engineered before work began. Given the scale of the array and the complicated roof layout, access planning was very important. A combination of telehandlers, scissor lifts and scaffold systems were deployed to safely transport materials and install equipment across the roof, while maintaining segregation between works and operations.

We chose a trapezoidal metal roof mounting system which was installed with sealing tape and slipping protection to make sure the roof stayed watertight. PV modules were installed in carefully sequenced zones to manage loading, maintain balance across roof sections and allow work to be carried out efficiently. DC and AC cabling was routed with clear labelling, robust containment and compliant isolation installed throughout to make future maintenance as easy as possible.

Electrical integration included the installation of generation metering, CT clamps, AC isolation and monitoring hardware, alongside secure data connectivity for live system monitoring. All commissioning and testing was carried out in line with industry standards, with full documentation to support handover, compliance and ongoing management.

Throughout the programme, our dedicated project manager coordinated subcontractors, access equipment, deliveries and site logistics, making sure the installation was completed safely, efficiently and to specification. The result is a high-quality solar PV system integrated into a mission-critical business.

Gamma case study

Performance & Impact

The system will generate 214,160 kWh per annum, with 100% of the solar energy consumed on site, making the system perfectly suited to the load profile of a data-centre. The installation will reduce carbon emissions by 44,328 kg of CO_2 per year (equivalent to the carbon sequestration capacity of roughly 2,015 mature trees).

To protect future performance, we are providing Gamma with an annual maintenance package, including detailed system inspections, inverter checks, DC testing, performance simulation and reporting. As roof access is restricted, visual inspections will be carried out using drones. This approach helps ensure reliability, safety and predictable output throughout the system's lifespan.