

THE WATERSIDE CENTRE GUILDFORD, SURREY



INTRODUCTION

The Guildford Waterside Centre – a modern riverside commercial complex in Surrey – set out to find a long-term solution to reduce its carbon footprint and improve energy resilience. Operated entirely on a voluntary basis, the Centre aimed to lower running costs while supporting its sustainability goals.

Titan Eco was appointed to design and install a high-performance solar PV and battery storage system, part-funded through a LoCASE grant. The installation provides dependable renewable power throughout the year, with integrated battery storage to maximise efficiency and self-consumption.

This forward-looking investment formed a key part of the Centre's broader strategy to enhance efficiency, reduce emissions and demonstrate environmental leadership within the local community.

IMPLEMENTATION

- **Assessment & design:** A survey was carried out to assess roof suitability, shading, and structural capacity. A tailored 3-array configuration was then developed to optimise generation across multiple roof aspects.
- **Installation:** The K2 framework was fitted, with corrosion-resistant fittings for a secure, weather-proof base. The solar panels were then positioned and secured to the mounting across the 3 rooves. The Solis 3-phase inverter and 2 Tesla Powerwalls were subsequently installed and connected.
- **Commissioning:** All components were integrated to ensure seamless operation between the solar array, inverter and batteries. The system then underwent full electrical testing and DNO approval before activation.



SYSTEM COMPONENTS

- ✓ **Solar panels:** 81 × Canadian Solar 410W modules (33.21 kWp) – high-efficiency panels from a Tier-1 manufacturer, offering proven long-term reliability and backed by comprehensive product and performance warranties.
- ✓ **Inverter:** Solis 30 kW 3-phase inverter – delivering high conversion efficiency with smart connectivity for remote monitoring and fault detection, and built-in protection features.
- ✓ **Battery storage:** 2 × Tesla Powerwall units (27 kWh) – for backup power and time-shifting of energy use, reducing grid reliance – features including real-time monitoring and self-learning software to optimise performance.
- ✓ **Mounting system:** K2 mounting – German-engineered aluminium and stainless-steel components for strength and durability. Corrosion-resistant, weather-proof and fully certified for wind and snow loads under UK building standards.
- ✓ **Pigeon-proofing:** Our premium pigeon proofing system, SolaSkirt® – preventing birds from nesting beneath the panels and protecting cabling. Made from black powder-coated aluminium for longevity, it provides a clean edge that integrates seamlessly with the solar array.



OUTCOMES

The 33.21 kWp solar PV system now generates just under 30,000 kWh of clean electricity each year, offsetting a significant share of the Centre's energy use and reducing carbon emissions by approximately 15 tonnes annually.

The project is expected to achieve a 3-year payback period and deliver annual savings of over £15,000.

With 27 kWh of battery storage, the system enhances The Waterside Centre's energy resilience, supports peak-time load management and provides full visibility through live performance monitoring. The installation has also strengthened the Centre's long-term sustainability while freeing up future funds for community-focused initiatives.

ANNUAL OUTPUT



29,870

kWh CLEAN ENERGY

ANNUAL REDUCTION



15

TONNES OF CO₂

ANNUAL SAVINGS



£15,650

ELECTRICITY & EXPORT



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