

FORT AMHERST CHATHAM, KENT



INTRODUCTION

Fort Amherst Heritage Trust – the charity responsible for preserving Britain’s largest Napoleonic fortress – set out to reduce running costs and lower the site’s environmental impact, with a clear focus on operational efficiency and long-term cost control.

To address rising energy use across the visitor café and other facilities, a rooftop solar PV system with battery storage was installed on the café building, providing clean, reliable power for both the café and the wider site – reflecting the Trust’s commitment to responsible site management and sustainable operation.

OUTCOMES

The 20.25 kWp solar PV system generates around 20,100 kWh of clean electricity each year, cutting emissions by approximately 4 tonnes of CO₂. Combined with the 20.4 kWh battery system, it delivers almost 30 % energy self-sufficiency, significantly reducing grid demand across both the café and the wider site – with a projected payback period of less than four years.

By producing and storing its own renewable power, Fort Amherst has strengthened energy resilience, lowered operating costs and enhanced long-term sustainability across its facilities, supporting the continued preservation of this historic site.

ANNUAL OUTPUT

 **20,129**

kWh CLEAN ENERGY

ANNUAL REDUCTION

 **4**

TONNES OF CO₂

ANNUAL SAVINGS

 **£4,000**

ELECTRICITY & EXPORT



SYSTEM COMPONENTS

- ✓ **Solar panels:** 45 × DMEGC 450 W all-black bifacial modules – high-efficiency (up to 22.5 %) N-type cells with a discreet appearance.
- ✓ **Inverter:** GivEnergy 20 kW 3-phase hybrid inverter – enabling real-time energy management, export capability and smart-charging features.
- ✓ **Mounting system:** Renusol Variosole mounting system – a robust, durable system designed for pitched solar installations – and Genius Speed Flash, for even load distribution without the need for drilling.
- ✓ **Battery storage:** – 6 × GivEnergy 3.4 kWh batteries (20.4 kWh) – Storing excess solar energy for evening use and allowing off-peak charging, to reduce grid reliance and overall running costs.
- ✓ **Pigeon-proofing:** Titan Eco's flagship pigeon proofing system, SolaSkirt® – made from black powder-coated aluminium, for longevity and a seamless integration with the array.



IMPLEMENTATION

- **Assessment:** A site and roof survey was completed to assess structure, orientation and electrical routes and connections.
- **System design:** The system was modelled to maximise solar generation across the café roof, and the DNO application was submitted for approval.
- **Installation:** The Variosole mounting framework was fixed to the tiled roof using Genius Speed Flash – avoiding the need for drilling into the slate tiles. The 45 DMEGC panels were then installed. The GivEnergy hybrid inverter and battery bank were subsequently installed for efficient power distribution across the site.
- **Pigeon-proofing:** A full perimeter of SolaSkirt® was fitted around the array, providing protection against nesting birds and completing the system with a clean, uniform finish.
- **Commissioning:** Electrical connections were completed to integrate the system with the site. The installation was then fully tested, commissioned and certified in accordance with MCS standards – and the export MPAN was subsequently obtained.

