

Solar PV Installation at Sunderland Aquatic Centre

Sunderland City Council

Client: Sunderland City Council

System Type: Rooftop PV installation

Location: Stadium Park, Monkwearmouth, Sunderland SR5 1SU, UK

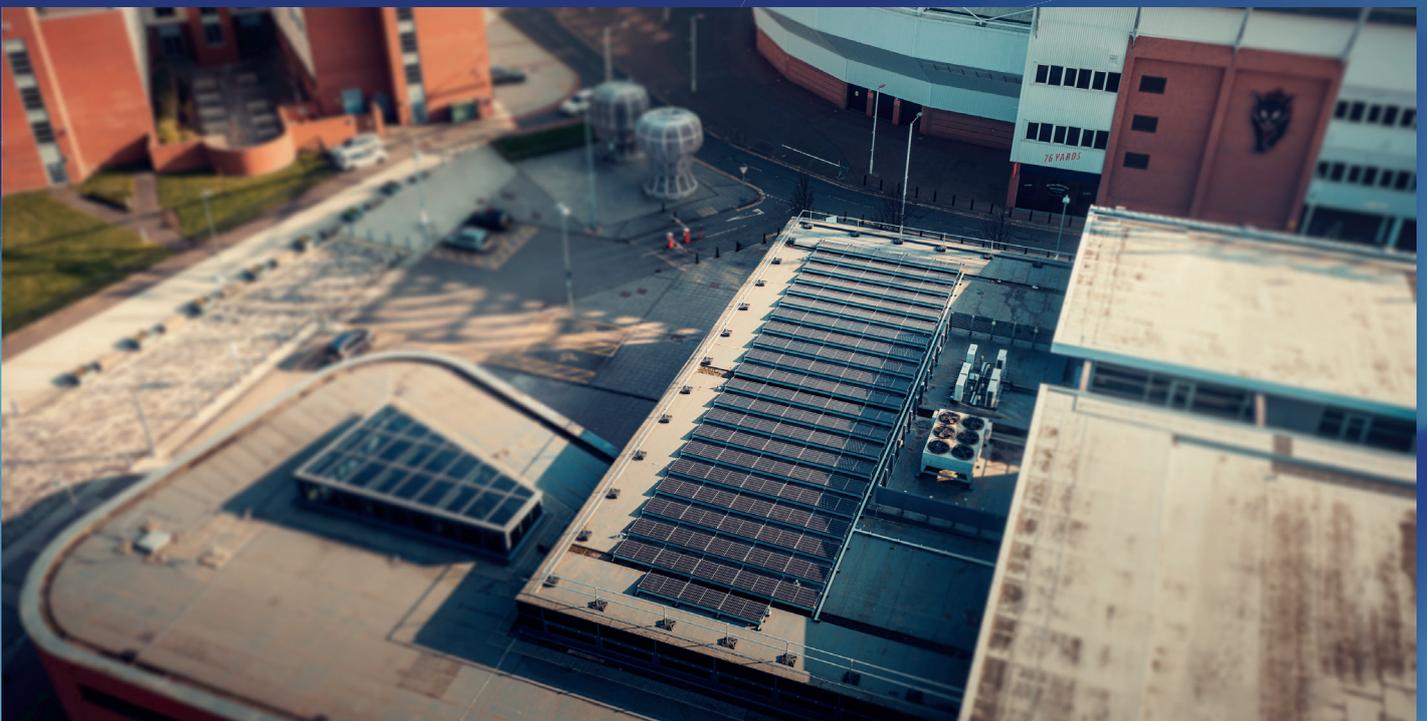
System Size: 46.35 kWp

Sector: Public / Leisure Facilities

Project Overview

As part of Sunderland City Council's drive toward sustainability and reduced carbon emissions across its estate, Oakes Energy Services was selected to deliver a rooftop solar PV system at the Sunderland Aquatic Centre - a popular leisure facility in Monkwearmouth. The project was designed to reduce energy costs, lower the site's carbon footprint, and support the council's broader environmental targets.

The system comprises 103 x 450W Trina Solar panels, delivering a total capacity of 46.35 kWp, paired with one SolarEdge 3 inverter for optimised system performance and real-time energy monitoring. The SolarEdge solution enables maximum energy yield from each individual panel, making it ideal for large installations like this, where shading or panel orientation may vary slightly across the roof surface.



Scope Of Works

1. Preliminaries

- Site set-up including mobilisation and demobilisation
- Provision of site cabin and storage cabin
- Temporary security fencing to secure work area
- Provision of telehandler for materials movement
- Waste management, including removal and disposal of site waste in compliance with environmental standards

2. Professional Services



- System design and layout drawings
- Structural report and roof loading verification
- G99 application and approvals
- Distribution Network Operator (DNO) application and liaison
- Preparation of project documentation, as-built drawings, and client handover pack

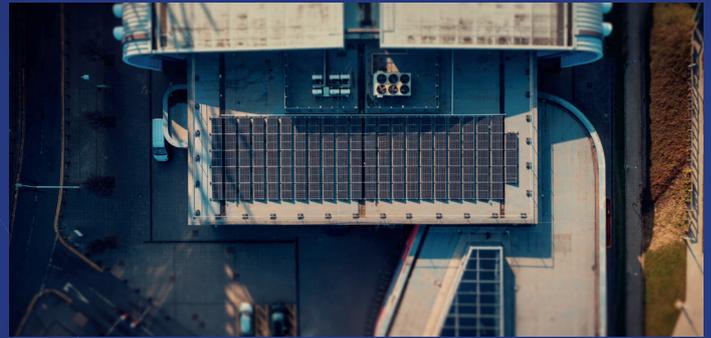
3. PV Modules



- Supply and delivery of **103 x Trina 450W solar panels**



Scope Of Works



4. Mounting System



- Supply and installation of **Valk Pro+ S Flat Roof Mounting System**
- Includes ballast requirements and wind deflectors

5. Inverter & Optimisers

- Supply of **1 x SolarEdge 3 Phase Inverter**
- Supply of **52 x SolarEdge Optimisers** for module-level optimisation and monitoring

6. Mechanical Installation



- Installation of flat roof mounting system including fixings, ballast, and wind deflectors
- Placement and securement of PV panels
- Crainage operations for lifting panels and equipment to roof level

7. Electrical Installation

- Installation of DC cabling and stringing between PV modules and optimisers
- Installation of AC cabling and containment systems
- Inverter installation and connection into Distribution Board (DB) panel
- Testing, commissioning, and certification of the complete system

8. Scaffolding

- Provision of temporary edge protection system
- Loading bay for material handling
- Access tower for safe roof access

9. Permanent Edge Protection

- Supply and installation of **Harcon permanent edge protection system**

Project Delivery

From the outset, the project was carefully planned to ensure it could be delivered with **no disruption** to the facility's day-to-day operations. Working on an occupied and operational public site, safety and coordination were of utmost importance. Our project team liaised closely with Sunderland City Council and the facility's management to create a schedule that accommodated site access, deliveries, and working hours - ensuring a smooth, efficient rollout.

The installation was completed **on schedule**, thanks to effective planning, experienced delivery teams, and favourable working conditions. Alongside the supply and install of the new Solar PV system, we also installed Permanent Edge protection from Harcon.



Challenges & Solutions

One of the main considerations was working at height in a public environment, with minimal visual or operational impact. Our team implemented a comprehensive site safety plan that included controlled delivery times, temporary exclusion zones, and constant communication with the site to ensure public safety.

The integration of the fixed edge protection system was not part of the original brief but was identified during pre-start surveys as a valuable long-term addition. It provides safer ongoing access for inspections and cleaning—future-proofing the installation for decades to come.

Results & Feedback

The finished system not only met but exceeded client expectations. Sunderland City Council was highly impressed with the quality of workmanship, professionalism of the site team, and the speed of delivery. The new PV system is expected to generate a significant portion of the site's annual electricity needs, reducing dependency on grid power and delivering both environmental and financial benefits.

The council also appreciated the value-added approach Oakes Energy Services took in identifying and delivering a long-term maintenance solution through the edge protection system. This project stands as a strong example of public sector commitment to renewable energy and showcases the successful collaboration between the council and our experienced team.

Let's talk about how
we can help you.
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