

Projects

Supporting the design & development of a major solar and battery storage facility

PROJECT AT A GLANCE

Project:

Mass data collection for solar & battery storage development

Location:

East Midlands, UK

Client:

Independent Global Renewable Energy Engineering Consultancy

Duration:

**20 Weeks (2024)
1 week**

PROJECT BRIEF

Delivering comprehensive data capture across a 900-hectare site to support the design & development of a major solar and battery storage facility.

The project involved surveying a 900-hectare site designated for the development of large-scale solar and battery storage infrastructure.

Our client, a global renewable energy engineering consultancy, required highly detailed and accurate topographical data to inform both feasibility options and detailed design stages. A key requirement was the verification of buried services across the site, ensuring that all existing infrastructure was accounted for.

All outputs needed to meet RICS standards and be coordinated to Ordnance Survey and Ordnance Datum levels. Due to the scale and complexity of the site, a robust, flexible, and precise survey strategy was essential.

OUR APPROACH

To meet the demands of this complex project, we implemented a multi-faceted survey strategy that combined aerial and ground-based data collection methods. Drone-mounted LiDAR and photogrammetry were used extensively across open areas of the site, with flights conducted from more than 30 locations. This minimised our physical presence on the ground and reduced environmental disruption. All aerial data was rigorously checked against multiple ground control points, achieving positional accuracy within $\pm 25\text{mm}$.

Ground-based survey teams employed Leica GPS systems, Theodolites, and high-definition tripod-mounted laser scanners to capture areas obscured by vegetation or requiring higher-detail input, such as culverts, kerbing, and viaducts. Utility tracing was completed using ground penetrating radar and EMF detection equipment to ensure buried services were accurately mapped.

All collected data was processed and vectorised in AutoCAD at a 1:500 scale. This ensured compatibility with national mapping and elevation systems and provided a fully coordinated digital foundation suitable for all stages of development, from feasibility through to detailed engineering design.

CHALLENGES

- Ensuring complete and highly accurate data collection across a large, mixed-use landscape (rural and suburban).
- Minimising on-site presence due to environmental and community sensitivities.
- Navigating complex access requirements with multiple landowners and restricted zones.

PROJECT OUTCOME / DELIVERABLES

- High-resolution topographical drawings including verified utility locations.
- Orthorectified aerial imagery and full 3D point cloud datasets of the 900-hectare site.
- Fully coordinated digital 3D Triangular Irregular Network (TIN) topographical models.
- A “one-and-done” data collection strategy ensured suitability for all design phases, resulting in substantial time and cost savings for the client.

SERVICES USED

- Topographical Surveying
- Aerial Surveying
- Utility Detection
- Data Processing and Modelling