

Modular Electrical Building – Energy Infrastructure



Project Location

UK

Project Completion

2025

ODS Engineering delivered two technically advanced modular electrical buildings for a grid-scale energy storage development, designed to safely house medium-voltage switchgear and control systems within a high-risk electrical environment.

The buildings were engineered from first principles to mitigate the risk of a potential internal arc fault event, including controlled pressure relief, structural integrity, and personnel safety. Manufactured off-site in a controlled environment, each module was CE-certified to EN 1090 and fully integrated prior to delivery to ensure quality, safety, and programme certainty.

- ODS Engineering – Delivering safety-critical modular buildings for high-energy environments.
- DfMA-Driven Delivery Model – Engineered & tested before delivery which de-risked the project execution programme.
- Supporting modern energy infrastructure through compliant, performance-led modular design



The Challenge

Grid-connected energy facilities operating medium-voltage equipment present elevated safety and design challenges. The project required modular buildings that could:

- Safely accommodate MV switchgear under internal arc fault conditions
- Control pressure rise within enclosed electrical rooms
- Protect structural elements, doors, and building fabric
- Meet stringent fire, structural, and compliance requirements
- Be delivered on a fast-track programme with minimal on-site risk

The Solution

ODS Engineering designed and manufactured two fully integrated modular electrical buildings, engineered specifically to address these risks. The solution included:

- Structural design aligned with internal arc fault pressure analysis
- Engineered pressure-relief provision to limit room overpressure
- A2 non-combustible plantroom with 1hr fire related design
- Steel structure in line with EN1090 EX2 designed to withstand transient load cases
- Integrated ventilation, HVAC, lighting, and containment systems
- ABB 33kV Switchgear 25kA, 2500A SWG
- Factory Acceptance Testing (FAT) to validate build quality before delivery

Through off-site manufacture and early validation, ODS Engineering significantly reduced construction risk, improved safety assurance, and accelerated project delivery.



Design.
Manufacture.
Deliver.

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