

CASE STUDY

Ampd Energy's Enertainer's Power Entire Construction Site for Groundbreaking Research Facility

Ellison Institute of Technology
Oxford, UK

Background

The Ellison Institute of Technology (EIT) in Oxford is where science and innovation meet real-world impact. Led by a world-class faculty of scientists, technologists, policy makers, economists and entrepreneurs, EIT aims to develop and deploy commercially sustainable solutions to solve some of humanity's most enduring challenges.

Set for completion in 2027, the EIT Campus in Littlemore was designed by Foster + Partners led by Lord Norman Foster. It will include more than 300,000 sq ft of autonomous laboratories, purpose-built laboratories and dynamic spaces to spark interdisciplinary collaboration.

Following preliminary construction in 2022, Laing O'Rourke was appointed as the principal contractor and is completing the project as part of its focus on research and scientific development. The EIT project is a major investment in Oxford's expanding innovation ecosystem.

The Challenge

Diesel generators (DG) are a major source of power for tower cranes and site operations in conventional construction projects of this size. However, using DG's has an impact on workforce members and local communities, due to high levels of dangerous particulate matter, carbon emissions and loud continuous noise.

The EIT project was founded on the basis of achieving a more sustainable and healthy future; thus, Laing O'Rourke and Select Plant Hire looked for a more effective and cleaner alternative to traditional diesel. Without sacrificing dependability or performance, the construction site had to be entirely transitioned to zero-diesel operations.

The Solution

In partnership with Ampd Energy, the EIT project has become one of the first major UK construction sites to be run entirely by an ESS.

The site is entirely powered by Ampd's flagship product, the Enertainer energy storage systems (ESS), as opposed to DG's. With the potential to expand as construction moves forward, eight Enertainer units are currently in place, with a 250kVa mains supply connection for charging, offering dependable, emission-free power for the tower cranes and all construction-related activities.



For a project dedicated to advancing knowledge, wellness, and innovation, selecting a source of power for its construction is just as important as the buildings themselves.

Results

The tower cranes and all other site operations are supported by the Enertainers' stable and dependable energy supply. The Ampd Enertainers deliver:

- Fully electric operations removing the equivalent of 1.7Mw of Generator Requirement
- Diesel-free power preventing 1,763 ton's of CO₂
- Consistent, quiet, and clean power to support safer working conditions and reduce impact on nearby workers and any local urban areas.
- Real-time energy insights through Enernet for complete monitoring which enables data-driven decision-making to optimize your operations.
- Automatic recharging and minimal maintenance, resulting in higher productivity and uptime on site.
- Strong and dependable operations. The Enertainer is designed to endure challenging site conditions (such as adverse weather conditions)
- Removes the health and safety risks that come with diesel (such as diesel spillages).

This project reinforces Oxford's standing as an important hub for research, education, and innovation by making fully electric construction at scale possible.

By securing Ampd's ESS early in the planning process, Laing O'Rourke were able to avoid any potential delays, such as those associated with connecting to HV grid infrastructure, and ensured the timely commencement of this project. In an industry where every day matters, proactive planning can make the difference between further postponements and the timely



completion of projects.

The successful deployment of Enertainers at the EIT demonstrates that large, complex projects can be delivered efficiently, safely, and sustainably, setting a benchmark for future developments in the UK.

"Given that the EIT aims to develop and deploy commercially sustainable solutions to solve some of humanity's most enduring challenges, it was important for us to minimise our environmental impact in the construction of their buildings. The Ampd ESS were an obvious choice as an alternative to diesel generators, particularly given the huge demands on this project. The early deployment of these batteries across our site was essential to getting the early phases of this project underway without any delays," - Ian Fleming, Product Leader at Select Plant Hire



air pollution of

521,739 cars
saved*



1,763 tons
of CO₂ prevented



30 times
quieter than a diesel generator



removed the equivalent of
1,600+ kVa
diesel generator requirement

* Based on 40MPG diesel and a 20 mile Oxford round trip



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