VOLKERFITZPATRICK X ULTIMATE CELL ULTIMATE CELL TRIAL

CASE STUDY

VolkerFitzpatrick

ULTIMATE CELL by ULTIMATE POWER

LYNCH

BACKGROUND

Lynch is supporting VolkerFitzpatrick on the significant new industrial development in Biggleswade for Tritax Big Box Developments.

The project, located at Symmetry Park in Biggleswade will see the delivery of 827,000 square feet of high-quality industrial and office space over five brand new units. The scheme of works also encompasses extensive external works, including service yards, car parking, drainage and landscaping. This will reinforce the region's position as a key logistics and distribution hub.

SUSTAINABILITY

Sustainability at Heart is one of Lynch's core strategic pillars. We champion eco-friendly practices, social impact, fairness and integrity throughout everything we do. A key part of our sustainability commitment is our goal to achieve net-zero carbon emissions by 2040 (Scopes 1 & 2).

We are supporting our valued customer VolkerFitzpatrick with VolkerWessel UK's People-Planet-Purpose Sustainability Framework 2020-2030: 'A Decade of Action', the ambitious vision to be sustainable, innovative and future-oriented.

As part of this commitment, Lynch has partnered with VolkerFitzpatrick on a focused plant efficiency trial to reduce fuel use and carbon output on site. We supplied a 30-tonne Cat ADT, fitted with six Ultimate Cells, to capture accurate telematics data over a four-month period.

The aim was to assess real-world performance improvements and quantify the environmental benefits. This collaborative approach is one of many ways we are working together to drive sustainable innovation in construction.

THE TRIAL

Lynch supplied VolkerFitzpatrick with a 30-tonne CAT Articulated Dump Truck (ADT), fitted with six Ultimate Cell units, to capture detailed telematics data over a four-month period.

Throughout the trial, weekly review meetings were held between VolkerFitzpatrick's Environmental team and Lynch's Data and Sustainability team to track progress, review findings, and ensure consistency.

The performance of the trial machine was benchmarked against a sister machine, with idle time, and sites tasks and working conditions closely matched to ensure we would receive an accurate assessment of the trial machine's efficiency and environmental impact.

THE TECHNOLOGY

This smart retrofit fuel cell technology optimises combustion engines by producing hydrogen on demand. It introduces small quantities of hydrogen into the engine air intake via electrolysis, in response to driver throttle commands. The technology is straightforward, requiring no hydrogen storage tanks in vehicles or on-site.

The unit can be scaled up to three or six cells, depending on the equipment needed. This patented device is designed to work with all types of fuels, including diesel, petrol, LPG, and ethanol, meeting both US and European standards.

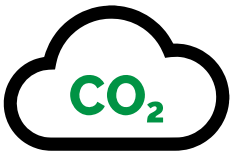
KEY RESULTS

During the trial, the test machine operated at a fuel burn rate of 17 litres per hour, compared to the control machines running at 22.4 litres per hour, a 24.1% improvement in efficiency.

The test machine consumed 8,730 litres of diesel and produced 23,369.6kg of CO_2, whereas the control machines used 11,520 litres and generated 30,873.6 kg of CO_2.

COST SAVINGS OF:

£3,264



CO² SAVED:

7,478 KG

FUEL SAVED:

2,790L OF DIESEL

PROJECTED ANNUAL SAVINGS

Based on a standard working year of **260 days** at **9 hours per day** (2,340 total hours), we can project significant efficiency gains.

At the historic fuel consumption rate of **22.4 litres per hour**, annual diesel use could reach **52,416 litres, producing 140,793.6 kg of CO_2 and costing approximately £61,344**.

By reducing consumption to **17 litres per hour**, annual usage drops to **39,780 litres, generating 106,406.4 kg of CO_2 at a cost of £46,920**.

This results in a potential annual saving of 12,636 litres of diesel, 34,387.2 kg of CO_2, and £14,424 per machine.

OUR PILLARS

Our strategic pillars govern everything we do,
Helping Our Customers Build Britain's Infrastructure.

This project aligns to:

HELPING OUR CUSTOMERS BUILD BRITAIN'S INFRASTRUCTURE.