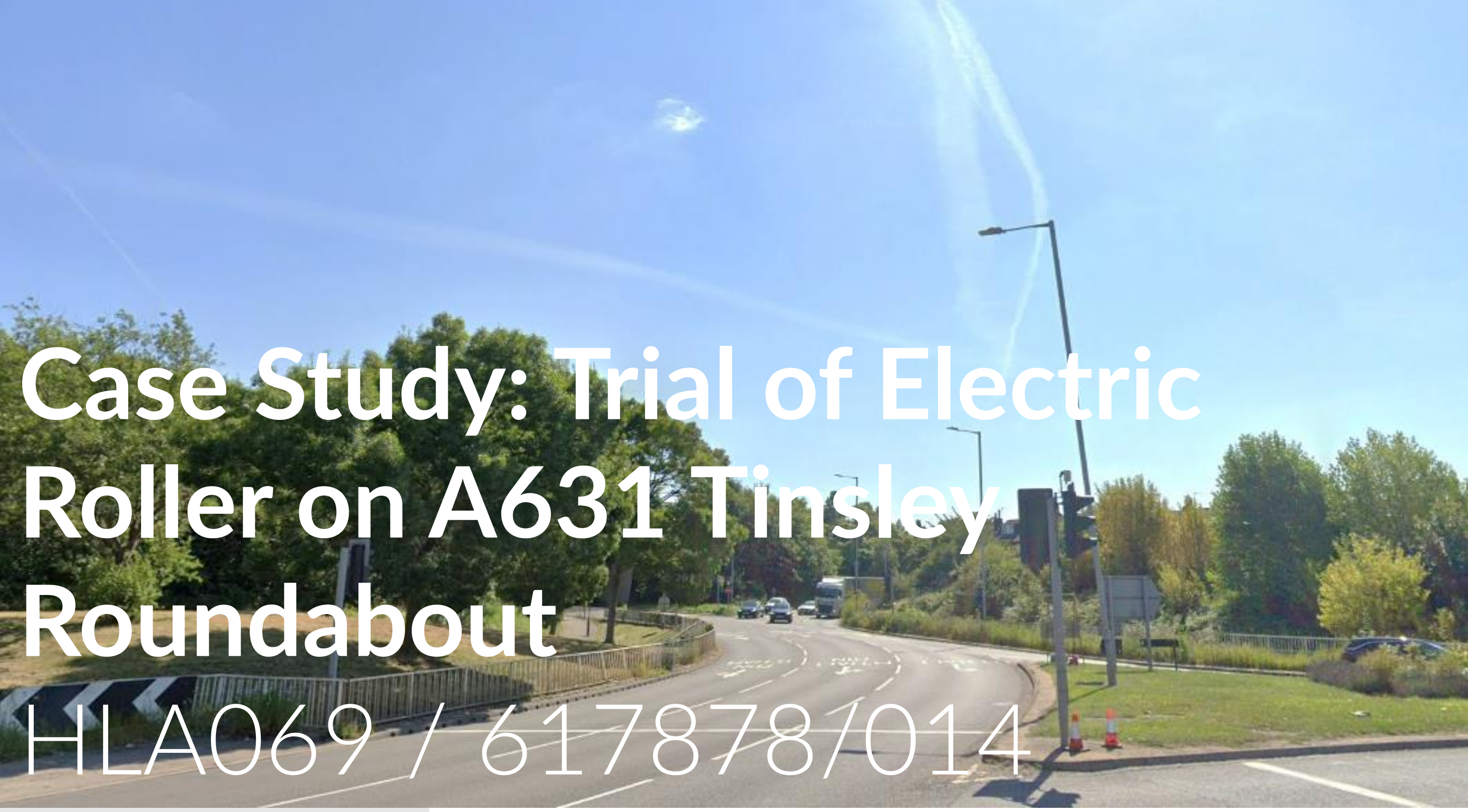

Case Study: Trial of Electric Roller on A631 Tinsley Roundabout

HLA069 / 617878/014

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Good practice, technical, innovation

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Key Facts
Trialling zero-emissions equipment to reduce carbon footprint.
Testing the feasibility of electric rollers for real-world roadworks.

Situation

As part of National Highways' Pavement Delivery Framework in Yorkshire Northeast, Galliford Try trailed the use of an electric roller on the A631 Tinsley Roundabout. The roller, supplied by Clee Hill, is part of a drive to explore innovative, sustainable construction practices. The trial aimed to assess the suitability, performance, and environmental benefits of the electric roller in real-world conditions. The site featured a compound close to the work area, providing secure storage and accessible power for charging.

Task

The primary objective was to evaluate the electric roller's performance and sustainability benefits in roadworks. Challenges included:

- Ensuring uninterrupted operations through proper charging and storage facilities.
- Assessing whether an electric roller could meet the compaction and durability requirements of the project.
- Overcoming logistical considerations for charging infrastructure, as not all sites offer the same proximity to power sources.
- Failure to address these dependencies could lead to delays and operational inefficiencies.

Action

The trial involved asphalt paving operations conducted during the week of 16th–19th September 2024, with a total of 66 tonnes of material laid over four shifts.

- Coordinating with Clee Hill to secure the HD 12e VV tandem roller for the trial.
- Establishing a compound close to the site to house the roller and its charging setup.
- Monitoring the roller's compaction performance, battery life, and charging efficiency.
- Ensuring staff were trained in the safe and efficient operation of the electric roller.
- The HD 12e VV offered features such as zero local emissions, low noise levels, and high compaction efficiency due to its advanced vibration system.

Result

The trial demonstrated that the electric roller performed comparably to its diesel counterparts, meeting all compaction requirements. Key outcomes included:

- Environmental benefits: Zero local emissions and reduced noise improved the working environment.
- Efficiency: The roller's lithium-ion battery system provided reliable operation across shifts with adequate overnight charging.
- Cost benefits: Potential savings in fuel and maintenance due to the electric motor's high efficiency and lower wear-and-tear.
- Team wellbeing: Reduced noise and vibrations positively impacted on-site comfort.

This trial highlighted the feasibility of electric rollers in suitable projects, paving the way for more sustainable construction practices.

Transfer

Lessons learned:

1. Site selection is critical—ensure proximity to a power source and secure storage.
2. Planning for charging logistics is essential to avoid operational delays.
3. Training operators in new technology fosters smoother adoption and minimizes risks.

Future projects with similar site conditions can replicate this trial. Broader implementation would benefit from improved charging infrastructure across regions.

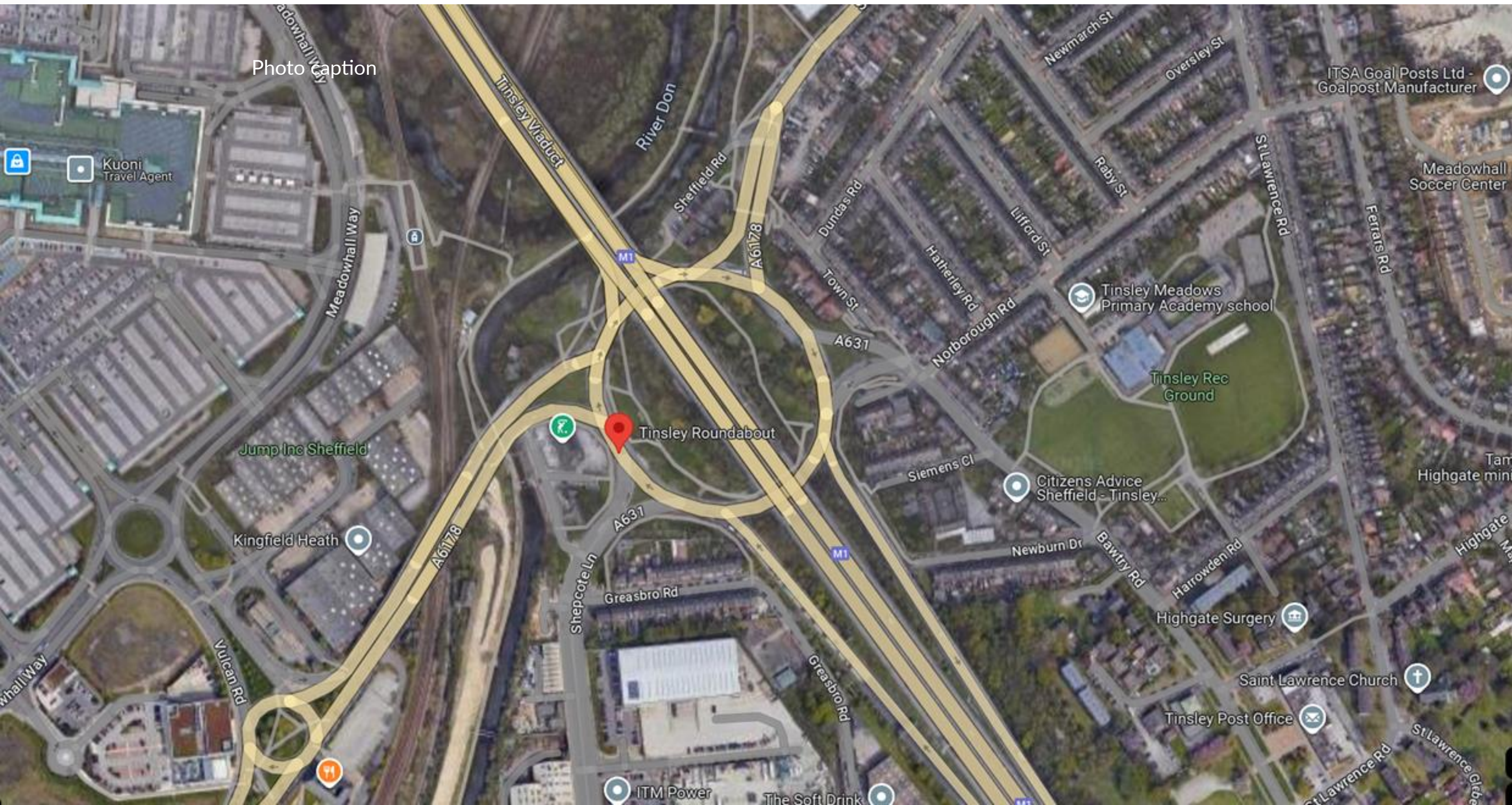
Key Benefits

Sustainability: Significant reductions in carbon emissions and noise pollution.

Innovation: Adoption of cutting-edge electric compaction technology.

Efficiency: Smooth integration into the workflow with minimal disruption.

Team wellbeing: Enhanced working conditions with quieter, cleaner equipment.



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