



Eurotunnel Case Study

Retrofitting of LED Luminaires & Bespoke Drivers

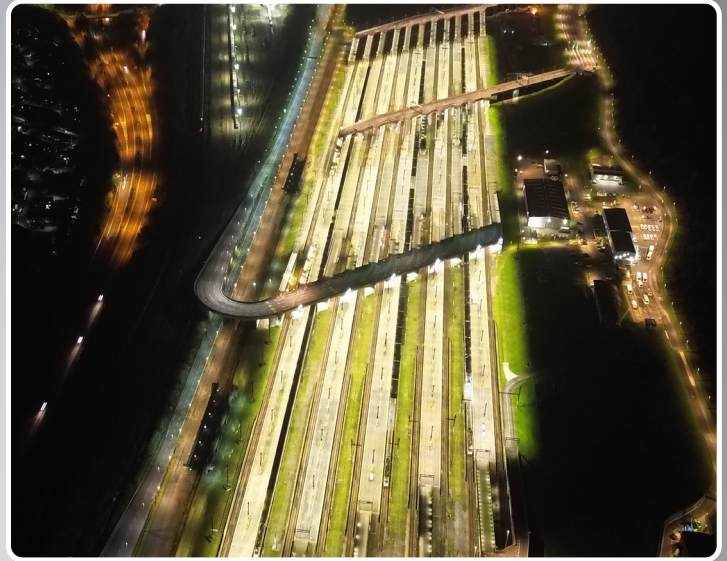
Abacus[®]
Leaders in Lighting

Project Overview

Eurotunnel partnered with Abacus Lighting to upgrade its aging and inefficient catenary lighting system. This upgrade aimed to improve safety, enhance operational efficiency, and reduce energy consumption and environmental impact. As Eurotunnel's trusted maintenance partner, Abacus Lighting provided a customised LED solution that exceeded expectations and addressed the site's unique challenges.

The existing catenary lighting, installed over 25 years ago, was no longer suitable for its purpose. Approximately 20% of the fixtures were non-functional, resulting in inadequate illumination across the platforms. This compromised safety, hindered staff effectiveness, and affected the quality of CCTV monitoring.

Additionally, the high-pressure sodium lamps had poor colour rendering and were expensive to maintain and operate. Accessing these fixtures for repairs or replacements required extensive planning, leading to operational downtime and financial strain. Recognising the critical importance of continuous lighting for the safe movement of trains and cargo, Eurotunnel needed a solution that would address these issues while minimising disruption.



Abacus Lighting's Solution

Abacus Lighting utilised its extensive knowledge of the site's operational needs to create a customised LED retrofit solution. This project involved replacing outdated sodium lamps with a modern LED system that seamlessly integrated into the existing catenary infrastructure. The new LED lanterns offered improved colour rendering, brighter white light, and enhanced visibility, which are essential for both worker safety and effective CCTV surveillance.

To further enhance reliability, Abacus installed modified drivers in every third column of the new lighting system. These drivers automatically switch to a 110V mode during a power outage, ensuring continuity of emergency lighting and meeting Eurotunnel's stringent safety requirements.

Abacus's experienced team, already well-acquainted with Eurotunnel's infrastructure, managed the installation with minimal disruption. By streamlining access, planning around operational constraints, and responsibly disposing of old fittings, Abacus ensured the project was completed efficiently and effectively.

Impact and Benefits

The upgrade has significantly improved Eurotunnel's catenary lighting system, offering numerous benefits. The new LED solution is expected to reduce energy consumption by approximately 57%, resulting in annual savings of £100,000 and cutting over 203,970 tonnes of CO2 emissions each year.

The enhanced lighting quality has increased safety across the platforms, with illumination levels that exceed industry standards. Furthermore, the system's lower maintenance requirements and greater reliability have minimised downtime, leading to improved operational efficiency.

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Impact and Benefits Continued

The inclusion of adapted drivers adds resilience, ensuring continuous emergency lighting and improving readiness for power outages. From a financial perspective, the investment is highly cost-effective, with a payback period of just over four years. Over the first decade of use, the system is projected to save nearly £1 million.

Conclusion

The Eurotunnel catenary lighting upgrade showcases Abacus Lighting's capability to deliver innovative and tailored solutions. By tackling the challenges posed by outdated infrastructure with a modern and efficient LED system, Abacus not only enhanced operational safety but also supported Eurotunnel's sustainability objectives. Moreover, the incorporation of specialised drivers for emergency lighting further underscores Abacus's commitment to excellence and its expertise in managing complex, high-stakes environments.

Interesting Project Statistics:

- 1,283 catenary fittings changed
- 73 shifts equating to ~2,500 hours worked
- The platform area is the same size as 26 football pitches
- Emergency lighting capacity up from 2 hours to 4 hours, in the event of power failure
- Fault protection upgrade meaning failure of a single light fitting, not a whole string
- Energy Consumption before - 172,000 watts per hour. Energy Consumption after - 66,700 watts per hour
 - Saving 384,000,000 watts per hour per year (on Average 10 hour night)
- This annual energy saving would be able to power a Tesla Car for 1,800,000 miles."

