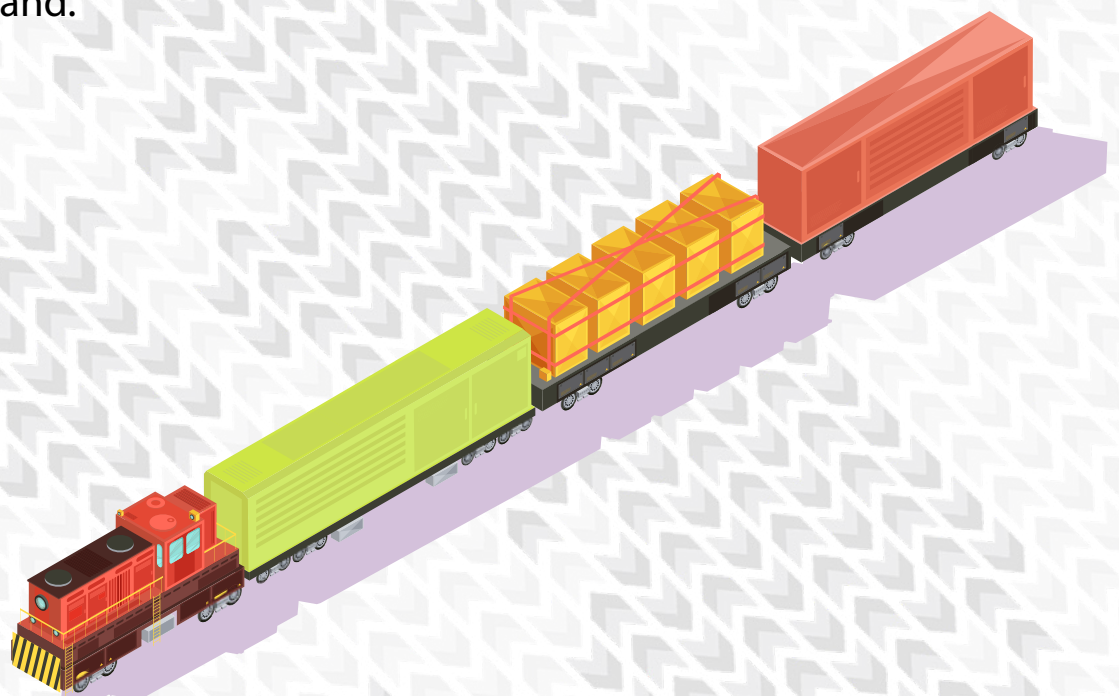




## PROJECT CASE STUDY Freightliner Inspection Pits

**Freightliner** is an international rail freight haulage company. It moves more than 750,000 maritime containers each year and operates more than 200 locomotives. Freightliner carries out in-house maintenance on its own fleet, and for third parties, using purpose-built facilities.

A leading Mechanical and Electrical consultant asked **Kellwood** to provide an **inspection pit lighting solution**, this time for a new **Freightliner** maintenance site in the south-east of England.



## GOALS AND CHALLENGES

- To provide a **compliant lighting scheme** that provides safe transit along inspection pits, while also offering high levels of illuminance to the underside of locomotives and rolling stock.
- To **minimise operating costs** – lowering electricity usage and reducing the site’s carbon footprint.
- Some inspection pits are subject to potentially **explosive hazards**; lighting hardware must be designed to avoid the accidental ignition of gases.
- Inspection and maintenance pits are industrial environments, **where products can be knocked, and broken.**
- Welding is often undertaken near lights, which can accidentally activate automatic welding masks.
- The solution should be compliant with **emergency lighting** requirements.

## THE DESIGN PROCESS & PRODUCT SPECIFICATION

Kellwood modelled the inspection pits and carried out lighting designs. Multiple calculation surfaces were included to assess vertical illuminance at floor level, and at a typical working height.

Kellwood’s optimised LED solution used low-energy **Stephenson Series** hazardous area linear lights. They could deliver the necessary lumen package to meet specification targets:

	Minimum	Target	Design Achieved
Average Lux	>300	>500	>530
Uniformity	>0.4	>0.4	>0.43



## PRODUCT FEATURES

### ATEX Certified:

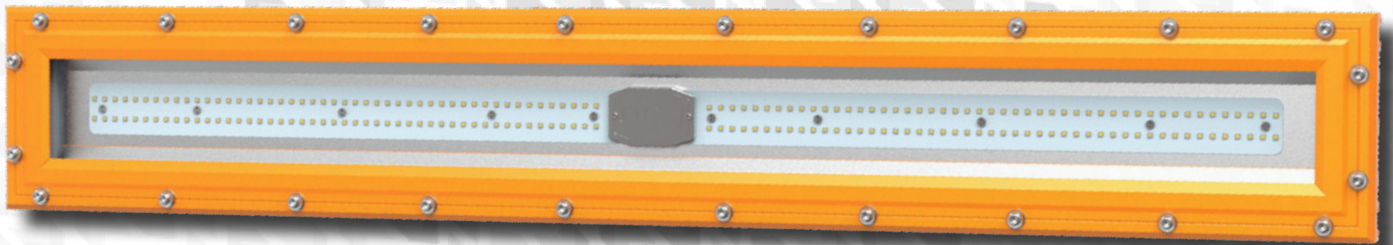
The Zone 1 certified Stephenson Series is suitable for installation in this potentially explosive atmosphere, helping to keep staff safe.

### Wire-in-Wire-out:

Lights could accommodate wire-in-wire-out installation. This removed the requirement for additional ATEX junction boxes and reduced overall costs

### Maintained Emergency:

An integrated 3-hour emergency option was supplied to ensure compliance with escape-route requirements. This simple emergency solution was cheaper to install than a non-maintained emergency lighting option.



### Robust housings and Wire Guards:

The impact protection of an already robust fitting was enhanced to IK10 by the inclusion of stainless-steel wire guards. Guards mitigate damage to fittings, avoiding excessive repair costs, and protect the client's investment.

### Frosted Optics and a 1200mm Housing:

The required lumen package could be delivered in a smaller housing, however lights were supplied with frosted diffusers and large housings. The larger, diffused, light-emitting surface reduced glare and fatigue for site staff, while also avoiding accidental activation auto welding masks.

## THE RESULTS

Freightliner received a compliant inspection pit lighting solution that helped reduce site running costs, reduce their carbon footprint, while ensuring their staff remained safe and productive.

