

> CASE STUDY

LIVERPOOL STREET STATION BIG STATIONS NEED BIG SOLUTIONS



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Quick Facts

- Estimated 57% saving in energy consumption
- Integrated HOLOS Wired controls system
- Less on-going maintenance
- Improved Volumetric Lighting

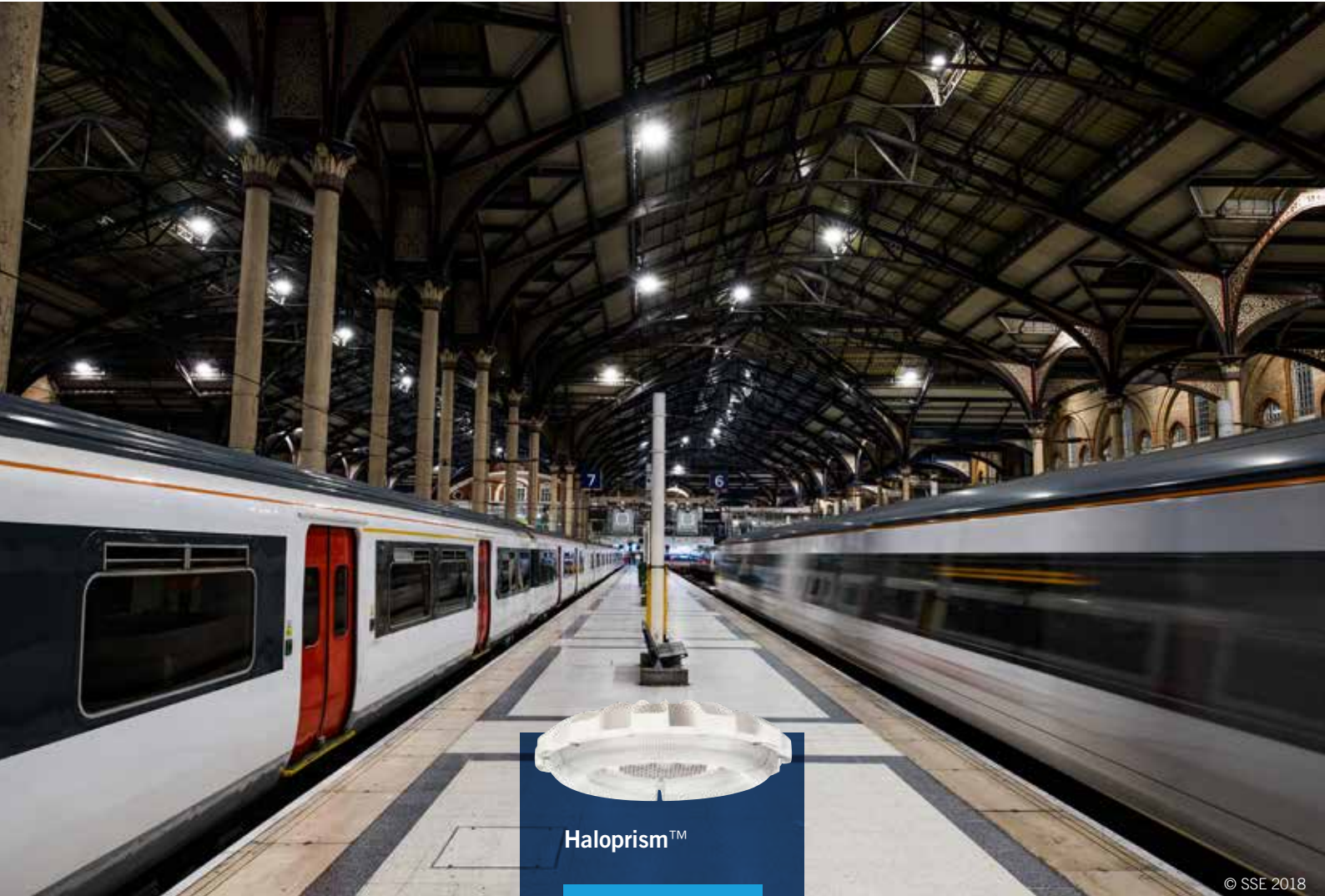


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Previous installation



Haloprism™

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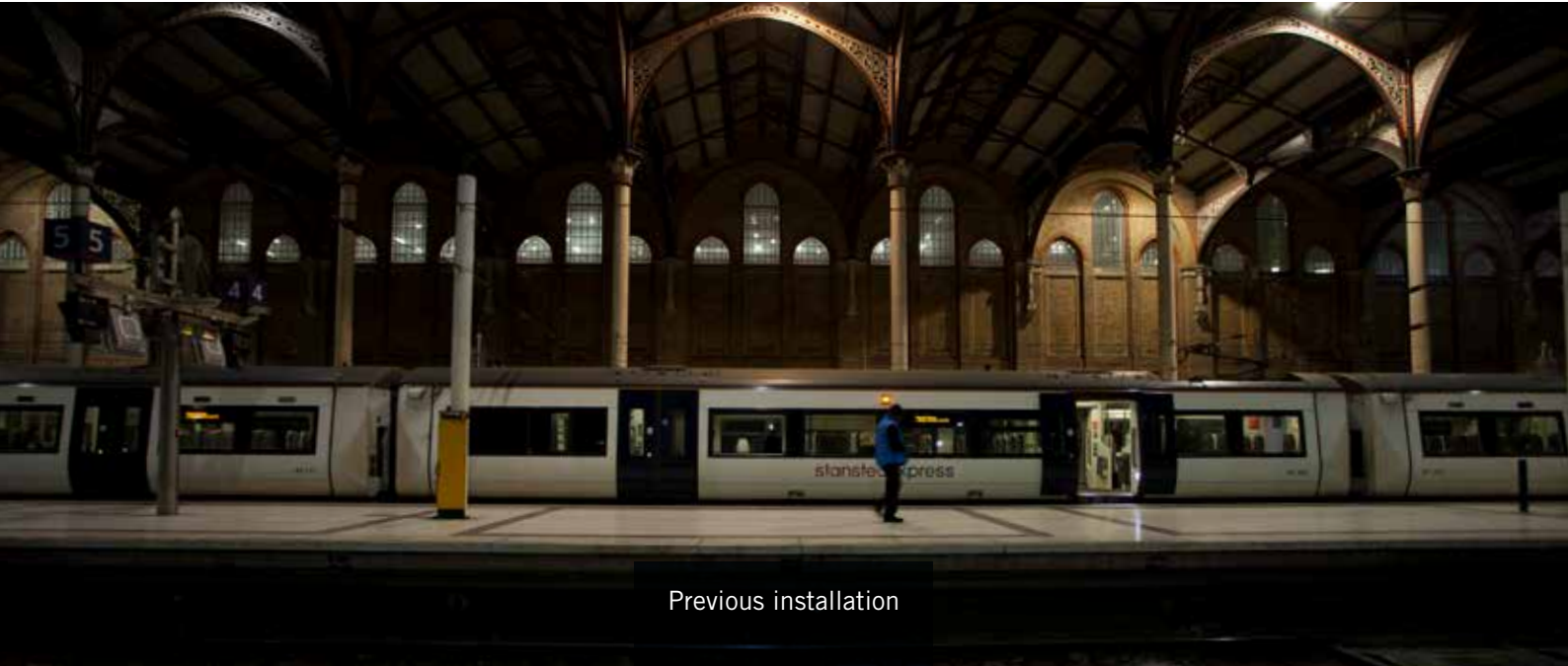
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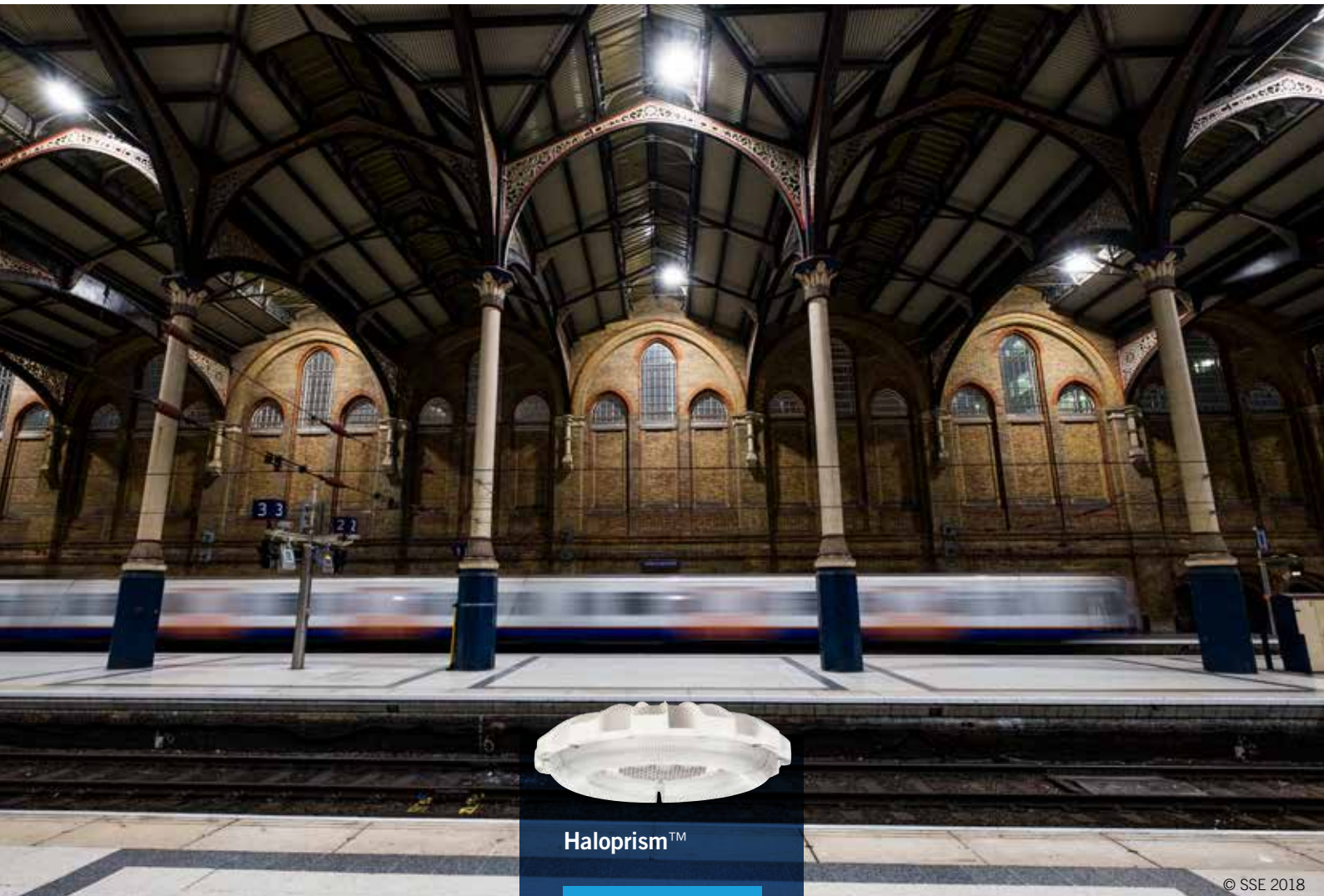
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BACKGROUND

Liverpool Street railway station in London was built in 1874 and is the third busiest in Great Britain. The station is vast with 18 platforms, an Underground rail network interchange and over 50 retail shops. The station operates almost 24 hours a day throughout the year.

The electrical switchgear and cabling is equally as complex but, being over 25 years old, needed to be replaced. The contract to replace this equipment was won by SSE Enterprise Rail.

CHALLENGE

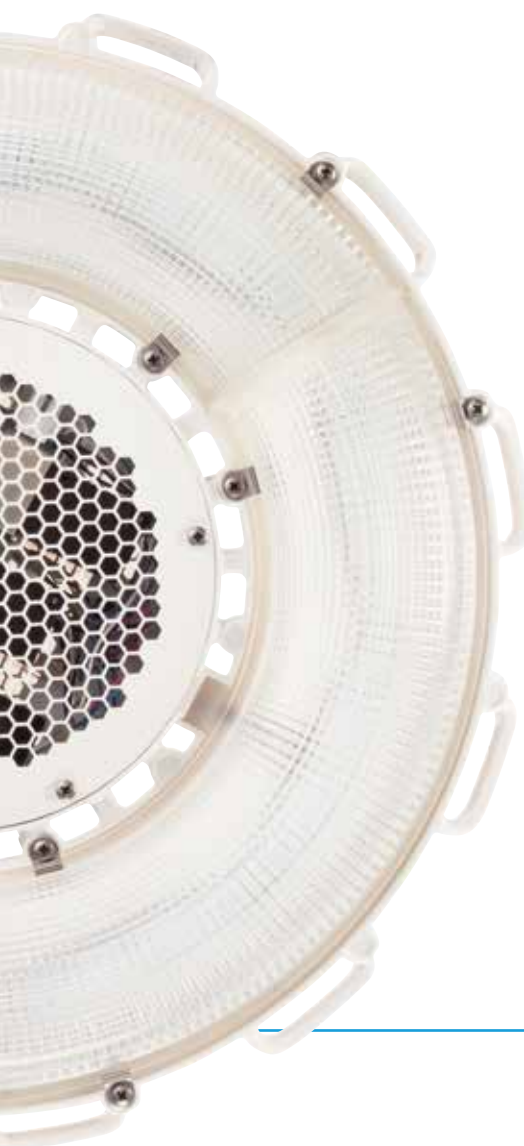
Changing the lighting was not part of the SSE contract. However, the existing lighting used 1kW metal halide highbays and Holophane worked with SSE on a solution which Network Rail, that a great deal of energy could be saved by using LED highbays. Halving the wattage could also save on the size of the cable and switchgear required. There would be further savings in lamp maintenance.

There were two major challenges. The first was ensuring safe and easy access to the luminaires; these are mounted high up under the glass roof. These positions are fixed and the second challenge was to make sure that the new LED luminaires could be used in the same locations and yet provide better and more energy saving lighting.



THE SOLUTION

HOLOSWired



The solution was to use the award winning 426W (55,000 lumens) Haloprism highbay from Holophane. This, alone, delivered a 57% saving in energy consumption.

What's more, the 4,000K LEDs have a colour rendering index, CRI of >80 thus delivering high quality lighting to the station concourse and platforms.

Light distribution

The other big advantage of the Haloprism for a project such as this where the luminaires had to be replaced on a one to one basis, is that the Haloprism is available with five different optical distributions, (Narrow, Focused, Intensive, Broad and Extensive) although just three beam types were finally used at Liverpool Street.

The torus shaped refractor with PrismaLED technology gives improved "volumetric illumination". Thus the space appears much more light and airy.

Maintenance

The rated life of the LED module is 100,000 hours (L70B50@30C) meaning that it lasts six times longer than a typical 1kW metal halide lamp. Thus there are huge savings in lamp replacement costs.

This longer life coupled with the glass refractors on the Haloprism which have high resistance to the dirt found above railway trains means that the frequency of cleaning can also be reduced and the concourse lighting stays brighter for longer.

Fewer maintenance visits also means increased safety because the staff had to have special training, a licence and specialist equipment to access the luminaires.

Network Rail also needed a solution to make it easier for maintenance staff to handle the fitting, if it was required. Above each fitting on the glass roof is a hatch and Holophane designed a mounting bracket with a 'handle' that ensures a person can easily grasp the fitting and pull it through the hatch.

Energy saving

The biggest savings come from using a 426W highbay instead of 1kW. There are further savings being made by using the Holophane HOLOS Wired control system, which has the potential to reduce energy consumption by up to a total of 70%. This is setup for daylight harvesting and to control the illumination levels in the station. On bright days, the light output from the highbays is reduced, thus saving even more energy.





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