

In January 2010 Dialight 's Agent, Ocip Energy Ltd, approached the ExCeL London management team with a view to utilising LED lighting products to both reduce energy consumption and started investigating to see how they could improve their lighting in order to achieve uniformity throughout the central boulevard of the exhibition and conference centre. At almost half a mile in length this is the main thoroughfare and public space used by all events. The solution that ExCeL chose for this critical space not only improved the light quality, but reduced operating and maintenance costs while also improving energy efficiency.

## ExCeL Case Study



Central boulevard almost ½ mile long

Number of fixtures – 194

Replaced – 400W HPS with 150W LED High Bay

Illuminance level – moved from 100 to 220 lux

Mounting height – 10 metres

Energy reduction – 70%

HPS = 12.32 W/m<sup>2</sup>, LED = 4.20 W/m<sup>2</sup>

### The lighting challenge

Engineering and Energy Manager, Chris Barnes explains how the need for improved lighting came about: “ During the Phase Two expansion of ExCeL we used ETFE roofing above the new section of the central boulevard to allow us to harvest a lot of daylight. The Phase One section was still lit by 400W high pressure sodium lamps which produce variable colour rendering as they age, so it looked dark by comparison. We specifically wanted to improve the lighting so that visitors could flow through the two areas without noticing a big difference in lighting conditions. Lighting is a key part of the user experience of this building and, as we couldn 't cut holes in the roof of the old section to let in daylight, it had to be an internal solution to matching the light quality. ”

Additionally the ExCeL management team wanted to meet energy efficiency targets as part of their award-winning policy to continuously evolve and implement practices that deliver economic security, social and environmental benefits. A key part of this policy is to put a sustainable business strategy in place for lighting and other essential elements of its direct in-house operations.

### How the challenge was overcome with LED lighting

Working closely with Ocip Energy Ltd management team and Dialight 's engineers, ExCeL London agreed to a trial of eight DuroSite™ Series LED High Bay lights from applied LED technology specialist Dialight. The 150W LED High Bays were used to replace 400W sodium lamps on a one-for-one basis and delivered more than double the lighting level taking the measured lux from 100 to 220. On the basis of this result the installation was extended to a total of

194 LED High Bay lights throughout the central boulevard.

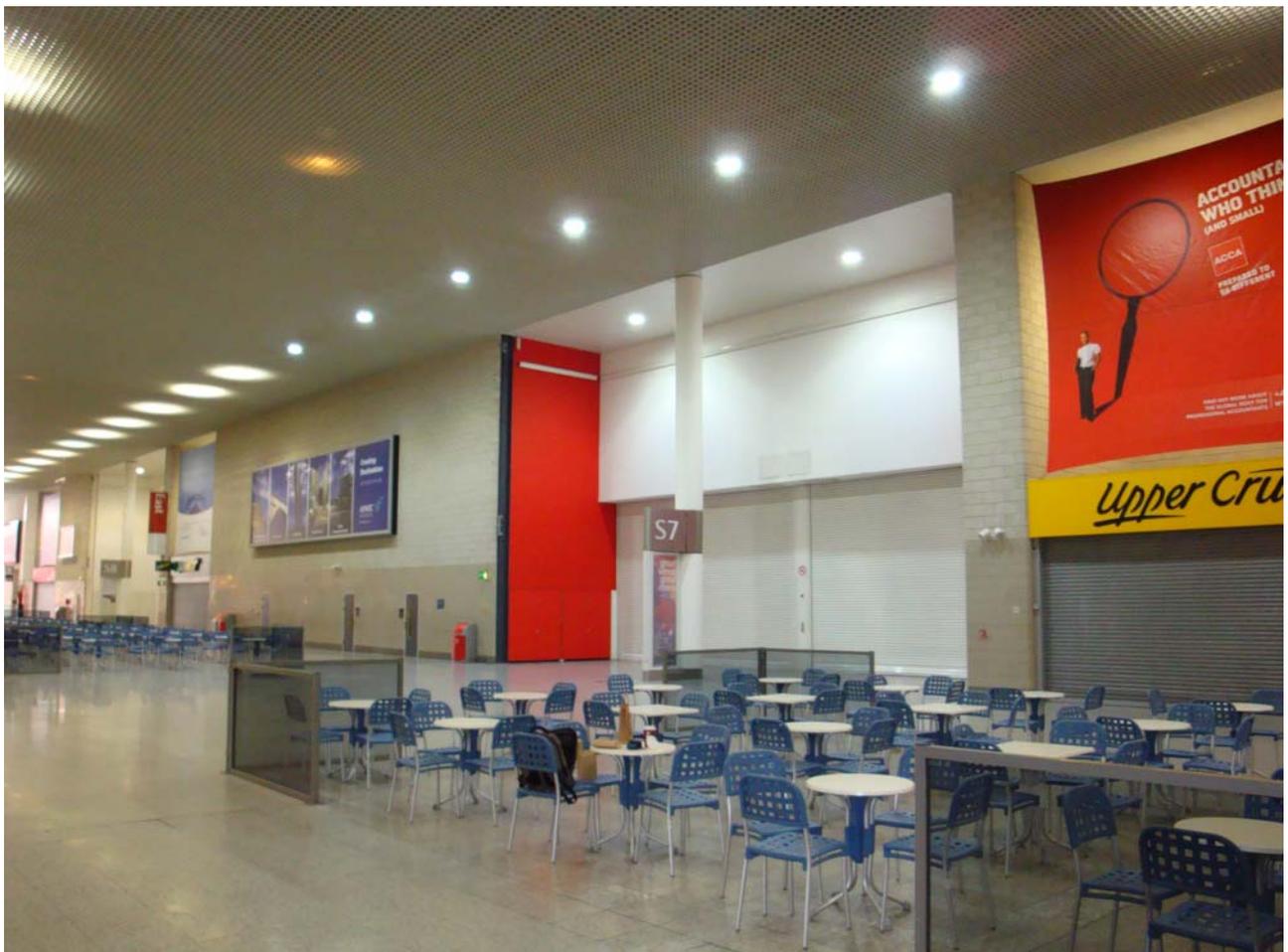
Chris Barnes had trialled other LED lights and says: “ Dialight ’ s High Bay suits the purpose for the building; it looks nice, it ’ s aesthetically pleasing, it ticks all the boxes. For example, the boulevard is a public area and when there ’ s a power cut the HPS can take 2-3 minutes to come back on, whereas the LED is back on instantly. Our events managers noticed that and they like it, so now there ’ s a push to get more LEDs installed. ”

He adds: “ With LED what you see is what you get – it ’ s got a far better colour spectrum than HPS – and that ’ s important for events like our big fashion shows. ”

Of the installation process he comments: “ Considering our ceiling height is 10 metres, it was very easy – four guys, six nights on two ‘ magic carpets ’. In fact the success of the boulevard prompted us to look at other areas like the dock edge walkway which was a big challenge as it relied on light from the building for illumination. We ’ v e now got 25 LED High Bays along the edge of the building, so the walkway is much safer and people are no longer worried about using it; not only that, but we can now turn off the building lights at night and that ’ s delivering 78% in energy savings. ”

Image of the Central Boulevard at ExCel Docklands during the swap-out to Dialight 150W LED High

## ExCel Case Study



ExCeL London 's management team takes great pride in having one of the greenest and most energy efficient exhibition centres in the world. By replacing the high pressure sodium lamps with Dialight LED High Bays they will potentially save close to 700kW of energy per day equating to over 250MW of energy per year. On top of that the LED High Bays carry Dialight ' s 5-year warranty which means they will also save greatly on maintenance.

## Looking ahead

The ExCeL London team has already expanded its retrofit of LEDs to include the canopied entrance to the conference centre where, for aesthetic reasons, each 450W sodium lamp was replaced by two 150W LED High Bays, one pointing up and the other down.

Further plans now include fitting Dialight LED High Bays throughout ExCeL ' s 46 conference halls. For Chris Barnes, the main issue is light quality while the reduced energy, maintenance needs and carbon emissions are all added bonuses to the lighting efficiency. As he says, "Our workshop ' s immediate reaction to the LED was ' Wow! ' I ' d describe it in two words and say the High Bay is ' selling itself ' . "