Project location
Oxigen, Dublin, Ireland

Project type
Waste and recycling facility

Waste and recycling facility reduces lighting energy consumption and cost by 68% using LEDs

The Challenge

Visibility in the recycling shed was extremely poor, as no natural light entered the building and the installed 400W metal halides operating 24/6 were rapidly deteriorating. Over 50% of them had failed and the remainder had discoloured, but the positioning of the machinery and height of the shed meant that the lamps were not easily replaceable. With heavy machinery being operated and the resulting debris from this further reducing visibility, the workers had to rely on the headlamps from the loaders, so safety in the shed was a concern. Oxigen recognised the drain on resource the halides were causing and set out to find a more efficient lighting technology.

The Solution

On the advice of Commercial Energy Solutions, Oxigen replaced the 24 x 400W halides one-for-one with Dialight's ultra energy efficient DuroSite® Series 150W LED high bays. The units offer a 5 year warranty, 100,000 hours lifespan and superior durability, which together have removed the maintenance concerns. The visibility has improved dramatically with the lux levels being 3 times brighter and the colour rendition index now greater than 70. As a result the workers can now see clearly and productivity has improved, making a safer, cleaner and more sustainable workplace.

The results

- 68% reduction in lighting energy use
- 68% reduction in carbon emissions
- Improved colour rendition
- Improved health and safety
- Improved productivity
- Annual saving of £7,800 on energy cost
- Vastly reduced maintenance burden and cost
- Payback period of 1.3 years on energy saving alone
- 78% ROI in first year
- Saving of £91,051 and 33.1 tonnes of CO2 over the life of the lamps

HPS

- Voluminous body
- Fragile
- Total power consumption 475W
- Sensitive to voltage change
- Slow warm-up
- Accumulation of dirt due to heat
- Contains dangerous and harmful gases
- High CO2 emissions
- Low energy efficiency
- Rapid deterioration of bulbs

LED

- Small and compact body
- Resistant to shock and vibration
- Total power consumption 150W
- Non-sensitive to voltage change due to its wide voltage range
- Instant on/off ability
- Low heat, so doesn't accumulate dirt, easy to clean
- Contains no harmful gases
- Low CO2 emissions
- High energy efficiency
- 100,000 hours lifespan

"The CES team worked with us through each stage of the project, from proposal right through to completion. They delivered a high quality, energy efficient lighting solution that delivers tangible savings whilst achieving greatly improved light quality and levels"
Aidan Doyle, Director of Operations, Oxigen

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