

CASE STUDY BESPOKE LED LIGHTING SOLUTION FOR BLACKROCK INVESTMENTS

OPPORTUNITY FOR LED LIGHTING

Lighting consumes a significant amount of electricity for a multi-story building. The 13 story building had, what was considered, efficient T5 fluorescent fittings. With a 24/7 run time totalling 8760h/year, the existing fittings used 904,032kWh per year. The £0.105/kWh electricity rate resulted in a lighting cost of £94,923 per year, and estimated annual lamp/ballast replacement maintenance costs of £24,480.

LED LIGHTING SOLUTION

Smart Systems UK Ltd provided a strategy to upgrade the existing 2,400 x 39W T5 fittings, (43w total load each, including ballast), with a new bespoke LED gear tray. The gear tray was designed to replicate the performance of the existing T5 fluorescent tube while reducing both energy consumption and latent heat output from the fittings.

Smart Systems developed the design of the replacement LED gear tray in conjunction with the installing electrical contractor.

This ensured that the installation time of each tray was kept to a minimum. This was critical as the upgrade had to be installed during night time working hours. The replacement LED gear trays each consumed a total of 20w, resulting in a savings of 53%. The Tridonic LED modules and driver provide a 5-year 50,000 hour warranty.



LED CASE STUDY RESULTS

By reducing the total fitting wattage from 43w to 20w the total annual energy saving is 483,552kWh, totalling £50,773 per year. Over the minimum 50,000 hour 5 year life of the LED lighting, at 24h/day the minimum lifetime energy savings is £253,865. In addition, over the same period, there will be a £122,400 saving on lamp and ballast replacement, giving a total saving of £376,265