

GREENLED - CASE STUDY



Saving energy through sustainable lighting

WATEREND BARN – St. Albans - Herts – showing the way forward



Description:

As part of its campaign to reduce energy costs and install energy-efficient equipment, the management of the Waterend Barn in St Albans, Hertfordshire, invited Greenled to light its backroom areas. Replacing 50 Watt halogen dichroic downlighters with their “Antares” lamp using 3.7Watts, Greenled successfully lit the bar area, the corridors, and the toilets.

Sustainability Criteria:

This exercise was designed to have both an economic and an environmental benefit.

Sustainability Data

Economic Benefits:

SAVINGS WITH LED INSTALL						
	Average consumption before install / kWh	Average consumption after install / kWh	kWh save	percentage	Save £ / day	Save £ / year
DAY	1231	1146	84	6.84%	£5.39	£1,967.02
NIGHT	347	322	25	7.28%	£1.06	£387.28
TOTAL	1578	1468	109	6.94%	£6.45	£2,354.31

These figures are taken from a half hour meter analysis of five weeks before and five weeks after the 88 “Antares” 3.7 Watt LEDs were installed in June 2008. *They illustrate a saving of over 1 kWh saved per lamp, per day.*

LED lights are designed to work well for 50,000 hours. Given the energy savings and the extra savings from not needing to change the lamps, this simple exercise generates a saving of £14,283.00 over 5 years at today’s energy cost.

Environmental Benefits:

Energy: 36,473 kWh/ yr saved

CO2 tonnes: 19.59 / yr saved

Case Study Name: Waterend Barn – St. Albans - Herts



Social & Wider Benefits:

- Since the LED installation, measured savings have proved considerably higher than anticipated, thanks to the subsequent reduction in air conditioning usage.
- No heat off the lighting has made the bar area considerably more comfortable for the staff
- 50,000 hour lifespan will negate the need to buy and change broken lamps. This saves approximately £308 pa for the replaced 88 dichroics every year.
- Halogen dichroics last only 2-5000 hours. There were always a few out which compromises the look and ambience of a well designed pub.
- No heat off the lighting has protected the bottles from the shelves from being damaged. The excessive heat reduced the alcohol content and affected the wine quality.

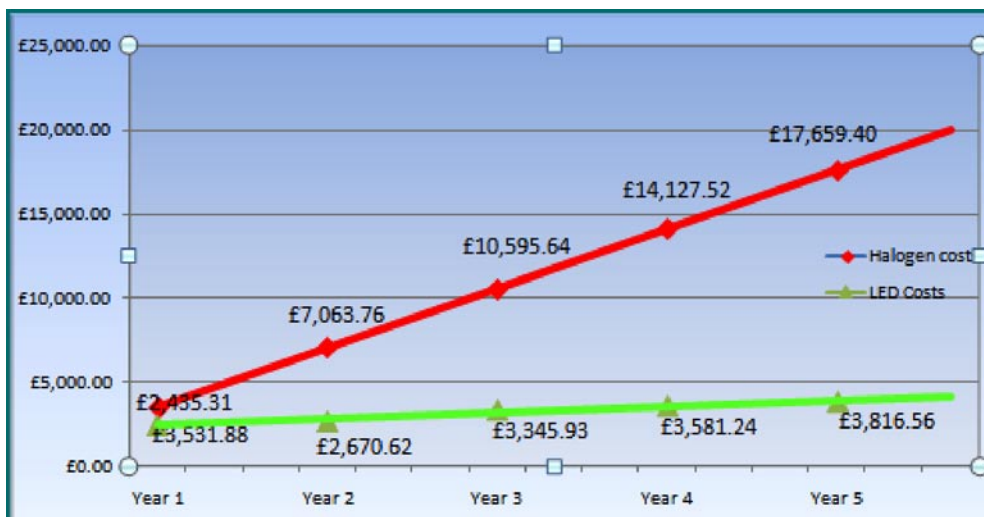


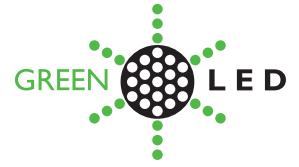
Business case

Initial Cost: £2200.00

Payback time: Energy costs -11 months

All comparative costs - £9 months





Summary of Benefits achieved

The management has seen an 8% decrease in energy consumption, equating to a cost saving of nearly £2,400 per year.

Since the LED installation, measured savings have proved considerably higher than anticipated, thanks to the subsequent reduction in air conditioning usage. Because Greenled LEDs convert energy straight to light, they emit very little heat, meaning further savings are possible.

Although this may balance back a bit in the winter where the heat from the dichroics adds to the warmth of the site, it is considerably more expensive and energy consuming to air condition than it is to heat.

This project has proven to the team at the company that LED technology offers a practical light which equates in colour temperature and light output to current halogen lighting. *Not one person has observed that the light was any different in the five months since the lights were put in.*

Further opportunities now available as a result:

Waterend Barn.

Greenled's approach is to introduce new LED solutions as they become available. Greenled have already identified that by replacing the pub's 500 Watt interior beam spotlights with 36 Watt lights from its Ascella range, the pub's management could save over 60,000 kWh or £5,500 per year.

Across the pub chain.

Following the success of the trial, Greenled have been asked to assess the savings implications employing this technology across the 700 pub estate. With an average of 50 dichroics in every pub, the savings will be over £6,000,000 over five years, *Or almost 35,000 tonnes of CO2 which do not need to be emitted.*