

GREENLED - CASE STUDY



Saving energy through sustainable lighting

Crown Hotel, Woodbridge Suffolk



Description:

Thorpeness and Aldeburgh Hotels, the new owners of the Crown Hotel in Woodbridge were keen to refurbish the Hotel in a contemporary and stylish idiom which reflected yet modernized the specific circumstances of an old coastal Suffolk coaching inn. Intrinsic to this brief was a will to install the most efficient lighting technology to keep their costs down and minimize their carbon footprint. Working with David Bentheim, the hotel's celebrated interior designer, Greenled have introduced a selection of lights which suit the lighting demands and yet use substantially less energy than the halogens which would otherwise have been used. The result is saving almost 17 tonnes of carbon from being emitted every year.

This initiative was made possible by the support of The Carbon Trust



Task:



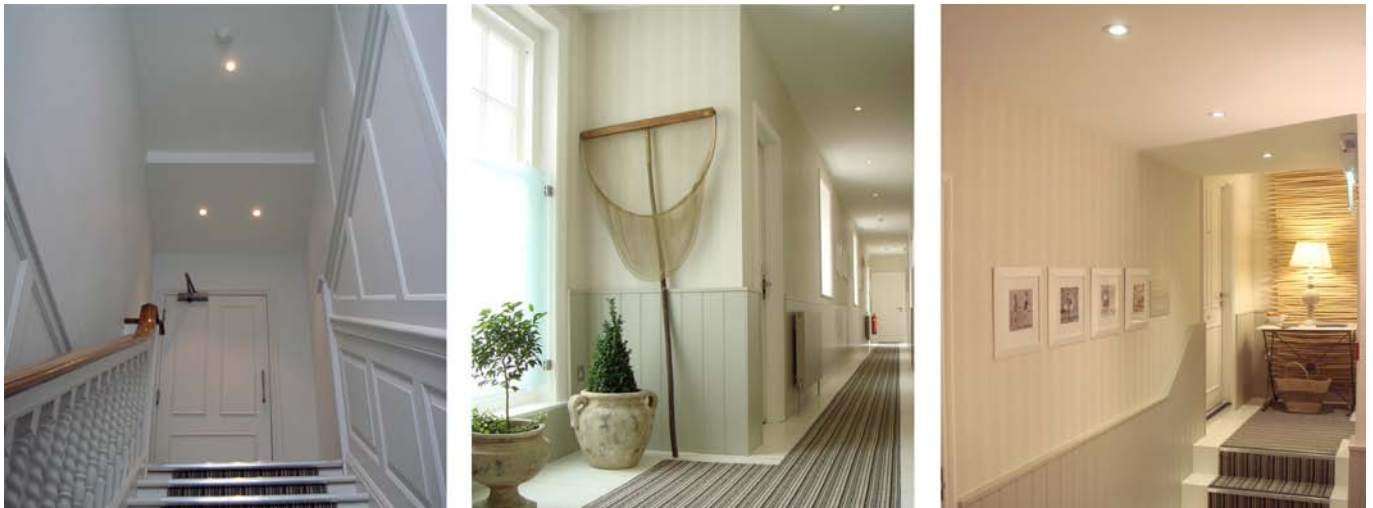
Dining area – required a dimmable system which gave a soft warm light from downlighters. The “Regulus” 9W dimmable lamp was chosen rather than a 35W halogen downlighter which would traditionally have been selected. This area is lit for 16 hours a day from before breakfast until the last resident has downed his final dram.

Lavatory areas – on for 24 hours a day and important that each cubicle has its own emergency light so that in the event of an electricity failure there is still enough light. For this the 4W “Chara” low voltage lamp was chosen rather than selecting a 35W halogen downlighter. This solution is using 89% less energy, saving over £500 pa in lighting the toilets alone.





Bedroom corridors – these cool and stylish areas are light coloured with pastel summery tones. The lights are on all day every day and the 4W “Chara” suits this area beautifully illuminating the colours sympathetically and dispelling emphatically the perception that LEDs are too blue and reedy. A mere 32 lights are saving over £ 950 pa in energy.



Bedrooms – each bedroom and ensuite bathroom has been lit with the Greenled 4W “Chara” to provide the right amount of light but using much less energy than the halogen alternative. These lights may only be on for 4 or 5 hours a day but when they are, they are using 90% less energy !





Sustainability Criteria:

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

Economic Benefits:

Energy cost savings: £3,440 pa at 11p / kWh
Other savings: Halogen lamps last for approximately 3,000 hours. In the corridor and lavatory areas every single halogen lamp needed to be replaced at least twice per year. Replacement with LEDs saves considerable maintenance resources.

Environmental Benefits:

Energy saved: 31,273 kWh pa
CO2 tonnes saved: 16.79 pa

Social & Wider Benefits:

The 50,000 hour lifespan of Greenled's LEDs negates the need to buy and change blown or broken lamps. This saves approximately £500 pa in replacement costs for the original 167 dichroics every year.

Halogen dichroics last for approximately 3,000 hours. Despite the most astute maintenance processes, there are always a few out which compromises the look and ambience of a well designed boutique inn.

Business case:

Inclusive of all the installation and fitting costs the entire lighting project cost over £22,000. The LED element of the project cost £13,343 including installation.

LED cost: £13,343 (£11,200 covered by interest free Carbon Trust loan)
Halogen costs: £4,320 pa
Ongoing costs: £3,255 pa including paying loan over 4 years
Saving: **£1,065 pa**
Saving over 5 years: **£8,083** by Yr 5 the loan is repaid and energy costs are £494



Graph depicting year-on-year comparative costs



Summary of Benefits achieved

This is a project which proves how the Carbon Trust can really make a difference. Thorpeness and Aldeburgh Hotels were really helped in their decision to install LEDs by the Carbon Trust's willingness to support the project.

The savings are impressive – over 31,000 kWh pa (at today's kWh rate that is £ 3.4k pa)

This project provides a reference site for the hotel design community to see a contemporary hotel by a leading figure in hotel design which is lit almost exclusively with LEDs.

Further opportunities at Thorpeness and Aldeburgh Hotels now available as a result:

With several other hotels in the group including the famous Swan in Lavenham, The Thorpeness Golf Club, The Thorpeness Hotel and The Brudenell and The White Lion in Aldeburgh, there is continuing scope for energy reduction in the existing estate.

Specifically The Brudenell Hotel is being refurbished in January and again the Group's forward-thinking owners are keen to work with Greenled and the Carbon Trust to keep on driving down their emissions.