

Case Study

Kalkari Discovery Centre, Sydney, Australia



Kalkari Discovery Centre cuts energy consumption by 74% in the refurbished lighting area.



Nestled in Sydney's Ku-ring-gai Chase National Park, Australia, Kalkari Discovery Centre is brimming with plants, animals and Aboriginal history to offer a centre for learning through a range of educational activities. A favourite among locals and visitors alike, the centre combines nature and important history with fun games to inform and inspire both adults and children.

Product used



D-CO LED



Polar LED

Key facts

- Annual energy saving: 74%
- Forecast lifetime net cost saving: \$7,489.42
- Forecast lifetime CO₂ saving: 5.94kg
- Payback time: 3.2 years



Solution

The existing lighting at Kalkari Discovery Centre used 50W halogen lamps with magnetic transformer and 36W T8 fluorescent tubes with magnetic ballast. The objectives for the refurbishment were therefore to achieve low energy consumption and reduced maintenance as well as a refreshing new look.

Offering a flexible solution for the centre's displays, D-CO LED is specifically designed as a halogen replacement offering very easy installation. With efficient LEDs and a long 50,000-hour lifetime, D-CO LED ensures the targeted energy savings and low maintenance solution.

For the centre's offices, Polar LED was selected because the troffer offers uniform vertical and horizontal illumination. The light distribution not only provides the correct lighting levels on the desks and task areas but also offers good levels of vertical illuminance, correctly lighting occupants' faces and room walls without the need for additional luminaires.

For a warm, aesthetically pleasing effect, LED lamps are used for general lighting in the main area to highlight displays and add ambience. This LED's large globe was particularly ideal for the existing antique style fitting.

Results and benefits

The new lighting installation has reduced Kalkari Discovery Centre's energy consumption by 74%, which will reduce annual energy costs by \$874.76 and create a total carbon emission saving of 0.69kg per annum. Maintenance is also cut from every 3,000-9,000 hours for the halogen and fluorescent solutions to every 25,000-50,000 hours (8.6-17 years) between the different LED solutions, significantly reducing the associated costs and inconvenience.

Overall, the lighting refurbishment is forecasted to deliver a lifetime net cost saving of \$7,489.42 and a payback time of just 3.2 years. There are other areas in the Centre with a lighting refurbishment opportunity too. In terms of lighting controls presence/absence detectors could be installed to further increase energy savings.

Kim Prodanov, NSW Project Lighting Consultant, says: "Ku-ring-gai Chase National Park is really going green, supporting its mission to protect the environment and establish an environmentally friendly reputation. This is just the first stage of the refurbishment project. There are further energy savings to be achieved in the theatre, in all service areas and in the rangers' office. There are many similar facilities across Australia that could soon follow the example of Kalkari Discovery Centre."



From Thorn's 15 ways to save energy, the following are key to minimising energy consumption at Kalkari Discovery Centre:



Ballast classification

Replacing the existing magnetic control gear with highly efficient electronic LED drivers reduces electrical losses and therefore energy consumption and costs.



Task lighting

The Gyro LED downlight solution provides flexible and precise accent lighting for the display area.



Lamp efficacy

LED solutions are replacing old and inefficient halogen lamps and standard fluorescent lamps.



www.thornlighting.com

Thorn Lighting is constantly developing and improving its products. All descriptions, illustrations, drawings and specifications in this publication present only general particulars and shall not form part of any contract. The right is reserved to change specifications without prior notification or public announcement. All goods supplied by the company are supplied subject to the company's General Conditions of Sale, a copy of which is available on request. All measurements are in millimetres and weights in kilograms unless otherwise stated.

Publication Date: 07/14