

Within limits

Shopping centres set strict limits on energy use for their tenants. Anton Oreb turned to lighting to help meet his landlord's demands. *Lux* magazine shares some of his secrets

When Anton Oreb wanted to set up a new branch of his designer clothing store in South Africa's premier shopping centre, Sandton City in Johannesburg, he was looking for something special.

Oreb wanted his Miguel Vieira store to emanate the same international style as existing stores, but also to meet a request from Sandton City owner Liberty Properties to cut energy consumption significantly. Liberty set a limit of 34W/m², and if Oreb's shop exceeded it, he would face penalties.

Traditionally, designers have created sufficient illumination in retail lighting by loading a store with large numbers of fittings. This consumes loads of energy, produces significant amounts of heat and emits ultraviolet (UV) light. Together, these factors combine to drive up energy bills for cooling as well as lighting and damage merchandise.

Oreb's other stores are fitted with a range of metal halide-based lighting schemes that also incorporate low-voltage downlighters and some fluorescent fittings. It was important to design and supply an efficient lighting scheme to meet energy targets without compromising the store's brand integrity.

A typical quality clothing store is lit to between 600 and 2,000 lux. The aesthetic appearance of the lighting design was equally important, as was the control of glare. Energy consumption for lighting at other stores varies from 115 to 150W/m², so the



target set by Liberty had not been met by any of Sandton City's tenants.


The solution was an LED installation based on the AlphaLED fitting by UK manufacturer Projection Lighting. The entire scheme is expected to pay for itself in about two years. The annual energy saving is 84 per cent – almost 40,000kWh – compared with a conventional installation.

'AlphaLED achieved 18.9W/m², which was almost 50 per cent lower than the newly instituted Liberty Properties standard and 84 per cent less than Oreb's other stores,' says Projection Lighting chief Gary Heald.

Additionally, the AlphaLED, specified for the scheme by Light Kinetics, has a life expectancy of 15 years, based on Oreb's annual use. This means the lighting should survive at least two or three store refreshes before it needs maintenance.

The AlphaLED range emits no UV, this means the damage caused to stock by more conventional light sources can be prevented. All luminaires used have a colour temperature of 4000K and a colour rendering index between 80 and 98. The Mini Washer wide beam luminaire has the best colour rendering and produces 400 lumens.

The high CRI helps customers accurately to judge the colour of their purchases – so fewer items are returned.

The store fulfilled the brief and the strict limits imposed on it for energy use and is now one of the most energy efficient stores in South Africa. 

ENERGY DASHBOARD



84%

Energy saved/year



2 years

Payback period

A conventional lighting installation of the scale of the Sandton City store would consume about 45,333kWh in a year. The installation with AlphaLED fittings will consume about 7,450kWh, a saving of 37,883kWh. The installation also eliminates carbon emissions of 20,581kg every year.

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