PHILIPS

Retail lighting

Case study

Seeing Albert Heijn supermarkets **in the best light**

A sophisticated lighting control system that delivers 40 per cent less energy usage, reduced maintenance and manages brightness changes for display items.

Background

Albert Heijn is part of the Dutch international retail chain, Ahold, which now comprises over 3000 stores. Every year, the company refurbishes approximately 100 of its stores. Albert Heijn has developed a design concept that it carefully implements across the chain. In 2012, it started to assess the benefits of integrating LED lighting into this design to replace conventional lighting.

The 1500-square-meter Alkmaar supermarket – located in Van Ostadelaan – is the first of its stores to change entirely to LED lighting. The aim of this project was to evaluate a number of factors: how well LEDs work in a store environment; what energy savings can be realized; and how the store ambience can be enhanced. As the company has enjoyed a long-standing relationship with us, it was natural to choose a lighting and lighting-control solution from Philips for the project.

The challenge

The initial phase of the project involved a number of small-scale tests with LEDs to determine the best way to achieve optimal lighting for different types of displays within a store. This period was used to demonstrate to Albert Heijn the return-on-investment potential from using energy-efficient LED luminaires in conjunction with a smart control system.

The design utilizes a Digital Addressable Lighting Interface (DALI) solution, in which each luminaire has its own unique address. The DALI network enables the commissioning engineer to adjust the dimming of each luminaire to ensure light levels are optimized to match different displays for each area within the store. While this was arguably the biggest challenge, the process was simplified considerably through the use of our EnvisionProject head-end software.

The solution

The lighting plan consists of a clever combination of LED solutions, in which the luminaires and the color temperature are perfectly matched to each display section. In total, 86 dimmable Philips LuxSpace Accent luminaires were used in a variety of wattages to highlight each display in the most visually engaging manner possible. The LuxSpace Accent proved to be a particularly effective choice over the fresh-food sections and also to draw shoppers' attention to the special offers located on the end-cap shelves.

The seven LuxSpace Accent LEDs over the meat display area were fitted with LED Rose Food Optics – emitting a more reddish accent than the 930K color from the standard luminaire – which have been proved to slow the discoloration of cut meats by 30 per cent. Meanwhile, 87 dimmable glare-free Maxos LED light-lines provide general customer lighting in the aisles, ensuring that the colors of all products are shown to their best advantage.

The DALI control system utilizes two Dynalite DDBC1200 dimmer controllers and an eight-input DDMIDC8 interface unit to integrate with the alarm

and refrigerator timer. This arrangement allows the alarm system to switch the lighting scenes between the normal trading brightness and a dimmed setting for out-of-hours restocking, while the refrigerator timer similarly sets the refrigerator lighting for sales hours. A DUS804C multipurpose sensor further ensures that lighting is only provided in the storage room when this area is occupied.

The dimmer controllers, interface unit, sensor, control panel and supervisory PC are connected using a Dynalite DyNet peer-to-peer RS485 communications serial bus network.

Benefits

The overall installation is more cost efficient than a conventional lighting system, with a payback time of just three years. Furthermore, early indications show that this store will use 40 per cent less lighting energy compared with other similarly sized stores using conventional lighting, with reduced maintenance costs during the system life. This equates to substantially lower investment costs when measured over a 10-year period.

Moreover, the Dynalite DALI control solution delivers a degree of sophistication unparalleled with conventional lighting systems. With the Dynalite DALI system, all luminaires are dimmed to 30 per cent during non-trading periods, saving more energy and standardizing lamp life across the store. The new system also allows the brightness to be easily fine-tuned to match display changes, thereby ensuring each area is seen in the best possible light to enhance the overall customer experience.

This pilot project has been extremely well received by both Albert Heijn staff and its customers, and has certainly exceeded the expectations of Store Manager, Kees Cats. An additional 10 stores have now been earmarked as follow-on pilot projects. The future is looking bright for Albert Heijn.

Fast facts

Project:
Albert Heijn Supermarket

Location:
De Hoef Shopping Center, Van Ostadelaan, Alkmaar, The Netherlands

Lighting architects:
Ruud Bagen (Philips)

Products:
Philips LuxSpace Accent luminaires, Philips Maxos LED light lines, Philips LED Rose Food Optics, Dynalite DDBC1200 controllers, Dynalite DDMIDC8 8-input interface unit, Dynalite DyNet peer-to-peer RS485 communications serial bus network, Dynalite DUS804C multipurpose sensor, Dynalite EnvisionProject commissioning and management software

> “**My customers will almost certainly not realize** that the pleasant atmosphere in the store is partly due to the LED lighting, but that makes it even nicer.”
>
> **Supermarket Manager**
> **Kees Cats**

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