Eaton designs and fits solutions for the world's largest fresh milk dairy processing plant.

In November 2013, Arla Foods started up its new dairy, the largest, most efficient and environmentally advanced fresh milk processing facility in the world. The 70 acre sustainable plant in Aylesbury is planned to be a zero carbon facility and incorporates innovative construction techniques, process technologies and cutting-edge renewable energy solutions. At full capacity, the dairy will process and package up to one billion litres of milk a year from British farms to produce 15 per cent of the UK’s fresh milk consumption. As part of Arla Foods’ 20:20 stretching environmental targets the company has utilised state-of-the-art technology to make sure it has minimal impact on the environment and surrounding landscape. For example, it has its own combined heat and power (CHP) plant and an anaerobic digestion facility for waste. It produces its own plastic bottles on site sends zero waste to landfill and the company has planted over 50,000 trees.

“Sustainability is at the heart of the new plant and maximising energy efficiency was a high priority, so we turned to Eaton’s Cooper Lighting and Safety business for their expertise in energy efficient lighting solutions” says Bill Dickson, M&E project manager at Arla Foods. “Another concern was that the lights should be long lasting and maintenance free, thereby enabling us to reduce our maintenance schedule.”

Eaton were selected as the supplier for this project as it had the ability to supply the entire internal lighting range for the complete facility.

“We were delighted to be chosen by Arla Foods for this prestigious project,” says John Robb, Marketing Director at Eaton's Cooper Lighting and Safety business. “We worked closely with them to fully understand their requirements and have put together a complete package of mains and emergency lighting for the various areas including cold store, processing area and offices.

“Arla Foods had three key drivers for lighting. The first was to reduce energy consumption, the second was to reduce maintenance, and finally, the light had to be excellent quality, thus providing a better environment for the colleagues.”

Results:

The wide range of fittings installed on site are directly in keeping with the site’s environmental agenda due to use of energy-efficient and maintenance free LED technologies with CO₂ savings coming in at over 104 tonnes.

Success Story: Arla Foods

Location:
Aylesbury, UK

Segment:
Manufacturing

Challenge:
Providing a full lighting solution, including mains and emergency lighting systems, for the world’s largest dairy processing facility.

Solution:
A comprehensive energy saving solution, including a variety of both mains and emergency LED luminaires to meet the needs of the building - including cold store and process areas through to office space and escape routes.

Eaton Lighting solutions for the world's largest dairy processing plant

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Eaton’s experts evaluated all energy sources and recommended lights fit for purpose, for example LEDs in the cold environments and fluorescent lighting elsewhere. “The solution includes our state-of-the-art technology and market leading products. In addition, the full emergency lighting system was designed to deliver the right products suitable for the building’s needs,” says John.

As part of a comprehensive energy-saving solution, Litex LED was supplied for the cold store areas. Conducive to warehouse applications, Litex LED’s highly effective multi-die arrays, combined with excellent thermal management and driver compatibility ensures a long and virtually maintenance free life. The bespoke chip quantity configuration reduced the number of wiring points and quantity required while still delivering a compliant lighting design.

For the processing areas, a bespoke 4 Industry luminaire was supplied. Sealed to IP65, the lamp provides a high degree of protection against the ingress dust and water, and the 4 Industry multi-lamp high bay was modified to include an internal reflector for increased performance plus the addition of quick release brackets. The quick release brackets mean the lights are very easy to maintain, as engineers can simply take the whole fitting down to replace lamps in the workshop. It also enables them to reduce the time they have to work at height.

The luminaires include controls for presence detection and daylight. Presence detection gives further energy efficiency savings, making sure lighting is only being used when necessary, and the daylight control gives optimum light conditions for the facility. The high colour rendered lamps create a pleasant working environment for staff.

A CEAG system was chosen as the emergency lighting system. This provides Arla Foods with inverter backed up emergency lighting while allowing automatic testing and flexibility to change the emergency fittings from non-maintained to maintained with a press of a button. There are four inverter units spread across the site, all easily controlled from a single computer.

Emergency lighting luminaires include a variety of LED solutions from Litex high bay in the cold store and process areas to the IP65 LED for the low level process areas. The office areas were fitted with 1w LED emergency fitting, Micropoint 2. This small luminaire combines the role of emergency light with background or security light, adjustable between settings with a touch sensitive button. Both IP65 and Micropoint 2 luminaires were supplied with open area escape route optics keeping quantities to a minimum while still complying with design requirements.

“Arla Foods had strict design on the criteria of the lighting and we are pleased to have delivered an energy-efficient solution that meets their needs, contributing to the sustainability of the world’s largest milk process plant,” says John.