

CASE STUDY BOMBARDIER BRUGES, BELGIUM

As the world's leading manufacturer of both planes and trains, Bombardier has built an extensive and diverse portfolio of winning mobility solutions. Everywhere people travel by land and in the air, a Bombardier product is ready to transport them. From category-defining business jets and commercial aircraft designed for the challenges of today, to sleek high speed trains and public transit that's smarter than ever. Bombardier is headquartered in Montréal, Canada and has offices and engineering sites worldwide.

SAFETY FIRST

At construction sites where precision work is done, adequate lighting is crucial. As Bombardier considers its 70,900 employees as the company's most important factor for success, creating a safe and pleasant working environment is crucial. Together with all employees Bombardier is focused on making mobility more efficient, sustainable and inviting than before. They call it The Evolution of Mobility.

SITUATION BEFORE UPGRADE

At Bombardier in Bruges (Belgium) several halls were equipped with conventional magnetic luminaires. These luminaires were very inefficient, resulting in high energy consumption.

"Light management capabilities were required for optimized light levels and maximum energy savings"

Retrofit without disrupting the working processes at the site was needed in order to get an energy-efficient, future-proof lighting system. Light management capabilities were required for optimized light levels and maximum energy savings.

PROJECT OBJECTIVES

1. Reduce energy costs
2. Reduce maintenance costs
3. Improve light levels

SITUATION AFTER THE UPGRADE

In order to contribute to the corporate sustainability goals, Bombardier in Bruges (Belgium) got in touch with Nedap partner RelScan. This company offered Bombardier a complete lighting proposal, consisting of a luminaire proposal and wireless control.

"Besides improvement in light levels, Bombardier adds up 30% additional energy savings, thanks to dynamic light management"

Bombardier's maintenance area (Hall 3F) is now equipped with 65 GE Lumination™ IS-Series LED luminaires with integrated wireless controls by Nedap. The installation is done by Bombardier's own employees.

The combination of GE Lumination™ LED luminaires and Nedap Luxon dynamic light management ensures a pleasant and safe working environment. GE's luminaires prevent glare, which is necessary for precision work on the trains.



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Dynamic Light Management

Besides replacing old, conventional lighting Bombardier also implemented skylights in the roofs of the construction areas. Daylight, task and time control eliminates waste of light as the LED luminaires dim automatically as soon as natural daylight enters the area.

Besides improvement in light levels, Bombardier adds up 30% additional energy savings, thanks to dynamic light management.

RE-CONFIGURATION MADE EASY

Thanks to dynamic light management, Bombardier in Bruges is put into place to easily adjust their lighting system to future needs. At this moment several halls are already equipped with intelligent lighting. One area is equipped with dimmable HID lighting, a maintenance area is equipped with GE Lumination IS Series linear LED lighting and another engineering hall is equipped with GE Albeo ABV high bay LED luminaires. All these luminaire types are integrated in and managed by one software platform.

“Instead of one-by-one adjustment of single light points, behavior of groups of luminaires can be adjusted in a few mouse clicks”

BOMBARDIER

the evolution of mobility

Bombardier, Bruges – Belgium hall 3F



If Bombardier decides to retrofit one or more of the other halls also, control of the new luminaires is made easy as these can be integrated wirelessly into the existing software platform.

The same goes for re-configuring existing light settings. Instead of one-by-one adjustment of single light points, behavior of groups of luminaires can be adjusted by a few mouse clicks.

EASY DATA ACCESS

By using dynamic light management software by Nedap, Bombardier now has easy access to all relevant information of the lighting system at the facility in Bruges.

If desired, Bombardier can access historical data. Tailored reports provided by additional software modules show in-depth information with regards to energy usage, compared with the situation before upgrade and for every desired time frame. Besides energy savings, maintenance advices and energy efficiency initiatives are provided by the system in order to manage lighting even more efficiently.

BASIC INFORMATION	BEFORE UPGRADE	AFTER UPGRADE	IMPROVEMENTS AND COST SAVINGS
Luminaire type	400 W HPL	48/90 W GE IS	
Number of Fixtures	28	65	
Power	450-470 W	48/90 W	
Average Lux	100-200 Lx	200-300 Lx	+++
CRI	70	80	++
Uniformity: U0		+	++
Lifetime (h)	12,000	65,000 / 100,000	+++ (L85/L70)
Average annual energy consumption without light management	13,020 kWh	4,400 kWh	
Average annual energy consumption with light management	13,020 kWh	3,080 kWh	30% additional energy savings through light management and controls
Payback			2-3.5 years

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Dynamic Light Management

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