

Future Lighting Solutions Orchestrates LED Makeover at Parent's European HQ, Yielding 90% Energy Savings

Architectural showcase
on the outside,
solid-state lighting showcase
on the inside.



Walk into Future Electronics' new EMEA headquarters outside of London, and you step into the lighting world of the future. From the custom green LED array gleaming like an emerald racing stripe beneath the reception desk to off-the-shelf LED luminaires installed both inside and outside the building, 'Future House' is filled with a rich array of lighting products emerging from today's solid-state lighting revolution. "Our extensive use of LED fixtures shows that we practice what our Future Lighting Solutions division preaches: LED lighting can be used as functional lighting," said Danny Miller, Managing Director at Future Electronics EMEA. LEDs are also slashing lighting-related energy use in the building by as much as 92% per fixture, advancing energy conservation initiatives.

SOLID-STATE SHOWCASE

Perched on the busy M25 corridor encircling the London metropolitan area, the 64,000-square-foot home of Future Electronics EMEA is as architecturally striking as the lighting inside. Three five-story cylindrical towers are connected by two glass-enclosed wings stretching from the central tower structure at 30-degree angles. The building in Egham, Surrey, was completed in 2000 and became the European nerve center of Montreal-based electronic components distributor Future Electronics in July 2008.



“This building gave us an opportunity to show off the capabilities of the LUXEON LEDs we work with every day as well as enjoy LUXEON-based lighting in our own workplace.”

Lawrence Madanda, General Manager, Future Lighting Solutions EMEA



Green LED 'racing stripe' and LED-backlit world map greeting visitors at the reception desk

In remodeling the building to suit the company's needs, Future Electronics executives decided to use solid-state lighting products to create a new lighting ambience and to replace many of the existing halogen and CFL fixtures. The goal was to promote the mission of Future Lighting Solutions - the exclusive distributor of Philips Lumileds' LUXEON® power LEDs as well as a source of LED knowledge, resources, programs, partners, components and logistics support for luminaire manufacturers – by turning the building into a billboard for LUXEON-based lighting applications.

LED ACCENTS IN THE ATRIUM

That message is clearly on display as soon as one enters the four-story atrium that serves as the Future House reception area. Decorative lighting on the ground floor as well as functional and accent lighting visible in the upper-story rooms draw the eye to the latest achievements in solid-state lighting design – all selected and in some cases engineered by Future Lighting Solutions itself.

For starters, the toekick of the massive reception desk shimmers with a 150 mm-high ribbon of 70 green LUXEON I LEDs utilizing a custom light engine developed by Future Lighting Solutions, running the full width and depth of the desk, and producing a reflection that creates a double band of green at floor level. The same color scheme is echoed in LUXEON-powered green spotlights and floor lights that replaced the original white halogen lighting in and around the two nearby glass elevators.

Behind the desk, a 5.3-meter-wide x 3-meter-tall world map etched into a frosted Plexiglas panel is backlit by 32 Powerwhite Linear Modules from Dialight Lumidrive, each containing six side-by-side neutral-white LUXEON Rebel LEDs used instead of conventional fluorescent tubes.





Meeting room entirely lit with solid-state fixtures

Around the perimeter of the atrium, 31 existing 50W halogen MR16 accent lights were retrofitted with 4W Dialight Lumidrives HL16 light engines containing three warm-white LUXEON® K2 LEDs simply by changing the transformer and replacing it with a constant current driver. Each LED retrofit uses only 5W of power when used with a constant current drive compared to 63W for the halogen bulb – typical of the energy savings for each solid-state luminaire in the building.

ALL-LED MEETING ROOMS

The company went even further in the four executive meeting rooms on the first and second floors, eliminating conventional lighting completely.

In each 14-square-meter meeting room, the four existing twin 26W CFL downlights were replaced with an equal number of LUXEON Rebel-based IST DL090 downlights from Integrated Systems Technologies (IST). The solid-state fixtures provide light output comparable to the CFL versions, fit in the same space, and deliver a performance of 45 lumens per watt that complies with the UK's Part L regulations for fuel and power conservation.

In addition, all eight 50W halogen MR16 lamps installed around the edges of each room were retrofitted with the same three-LED Dialight Lumidrives HL16 light engines as the perimeter fixtures in the atrium. The LED lamps provide the same wall-washing effect and can be used for soft illumination when the downlights are turned off.



LED task and accent lighting combined in boardroom fixture

The same HL16 light engines were also in the building's two informal ground-floor meeting rooms. The original GU10 halogen fixtures were replaced with an equal number of HL16s, providing the same level of illumination on the meeting tables.

In total, Future Electronics replaced 116 halogen bulbs with warm or neutral-white MR11- or MR16-compatible LED lamps from Dialight Lumidrives, including 42-30W halogen GU10 fixtures in two other meeting rooms near the elevators. The upgrades for those 116 fixtures alone cut energy consumption 92% from 6.974kW to 0.494kW.

BOARDROOM & CAFETERIA COLOR

Elsewhere in the building, Future Electronics used LED lighting to create special color effects that add visual interest to some of the main spaces visible





Color-changing solid-state luminaires in the cafeteria

from the atrium. In the second-floor boardroom, for example, each of the three drum-shaped fixtures hanging above the conference table is fitted with six warm-white Dialight Lumidrive MR16-compatible light engines for task lighting and topped with 18 blue LUXEON® I LEDs embedded in a custom light engine that bathes the ceiling in blue. Also, the 19 perimeter MR11 fixtures were retrofitted with blue LED lamps to create a blue wash on the walls. Independent switches make it possible to turn on only the blue lights when the room is not in use.

In the first-floor cafeteria, the seating area that overlooks the atrium is appointed with 16 combination white/RGB pendant lights from Italy-based Minulamp that are built with LUXEON Rebel LEDs and hung in clusters of four. The neutral-white LEDs in the bottom of each luminaire supply functional lighting, while the RGB assembly in the top projects constantly shifting color patterns on the ceiling. Whether viewed from the atrium or the seating area itself, the light show – like the blue-lit boardroom – is a conversation piece that is helping to spread the gospel of solid-state lighting.

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A TRUE 'FUTURE HOUSE'

All told, the initial LED installations at Future Electronics EMEA yielded a dramatic 86% reduction in lighting-related energy usage, replacing 213 fixtures consuming 12.198kW with an equal number of luminaires plus a few new decorative lighting fixtures drawing just 1.691kW. That includes halogen lamps in the flower beds that were removed in favor of LED landscape lighting from Clarity Lighting, reducing energy usage from 125W to 7W per luminaire.

And there are more savings to come. Over time, the EMEA headquarters plans to add more LED downlights, decorative LEDs on the building's three towers and signage, and other solid-state illumination as new LED products hit the market.

With this ongoing transition to LED lighting, Future House is living up to the promise of its Future Lighting Solutions division: advancing the use of solid-state technology in general lighting. One look at Future Electronics' Egham building, and anyone can tell that the future of lighting has arrived.

