PHILIPS

Office Lighting

The Edge

LED

Case study

Philips helps create a
**comfortable, productive
and sustainable**
environment at The Edge

Case study
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The Edge Amsterdam
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Office Lighting
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The Edge is an innovative, multi-tenant office building in Amsterdam. The architect's goal was to create an intuitive, comfortable and productive environment for employees that would inspire sustainable building design around the world.

Opened in 2015, it received an outstanding score of 98.36% – the highest ever awarded – from BREEAM, the world's leading design and assessment method for sustainable buildings.

A key aspect of the sustainable design is a connected lighting system from Philips that enables employees to personalize the lighting and temperature at their workspaces via a smartphone app. The system also provides data on activities in the workspace that helps further reduce the CO_2 footprint.

Making a difference in the workspace

Babette Bouman, Architect at Fokkema & Partners in Delft, The Netherlands, led the interior design on The Edge. She believes that dynamic working concepts and innovative interactive technologies spell the end of the desk as we know it. She said, "If you have an activity-related work environment, you can choose wherever you like to sit. I think the office of the future will be meeting places, cafeterias and a place to meet colleagues to collaborate." Bouman put these ideas into practice in The Edge, a landmark 40,000 square meter building developed by OVG Real Estate. It has a host of sustainability features, including solar paneling, aquifer thermal energy storage for heating and cooling, rainwater harvesting and a striking 15-story atrium with state-of-the-art daylighting and natural ventilation.

In collaboration with principal tenants Deloitte and AKD, Bouman was given free reign to design the office environment. Her concept included intelligent floorplans to enhance employee comfort and efficiency, flex workspaces, and the use of environmentally-friendly materials. "Deloitte is committed to using and analyzing data to create responsive and sustainable environments", she explains: "The agile work place concept is about flexibility, and this lighting system is also about flexibility. The connected lighting system and custom iPhone app allows you to adjust your climate and your lighting, according to your liking that day. So if the sun shines brightly, you can tone everything down to create a more comfortable way of working – wherever you are in the building."

How it was done

OVG and Deloitte worked closely with Philips Lighting who delivered a connected lighting system that uses cutting-edge technologies to enhance the flexibility of the open-plan office. It not only allows employees to personalize the lighting and temperature at their workspaces using a smartphone app, but it also provides building managers with real-time data on operations and activities. This data helps facility managers to maximize operational efficiency as well as reduce the building's CO_2 footprint, whilst the personalization features create a premier experience for employees. The designers had three key objectives for the connected lighting system: seamless integration with the building as a whole; provision for customized solutions in The Edge's unique environment; and smart interfaces that allow individuals to control their environment.

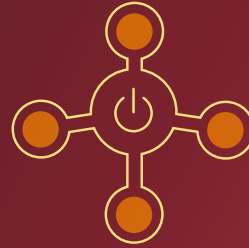# Connected Lighting at The Edge – the numbers

6,500
luminaires over 15 floors

3,000
luminaires with integrated sensors

750
PoE switches to provide connectivity and power

€100,000
expected savings in energy costs and €1.5m in space utilization costs

Life under a digital ceiling

The system uses nearly 6,500 connected LED luminaires to create a 'digital ceiling' in the building's 15 storeys. With integrated sensors in 3,000 of these luminaires that work with Philips Envision lighting management software, the system captures, stores, shares and distributes information throughout the illuminated space. Facility managers use the software to visualize and analyze this data, track energy consumption and streamline maintenance operations. The system uses 750 Power-over-Ethernet (PoE) switches to connect lighting fixtures to the building's IT network. With PoE, Ethernet cables send both power and data to the luminaires, eliminating the need for separate power cabling.

The integrated sensors capture anonymous data on room occupancy and temperature, data is then used to precisely deliver lighting, heating, cooling and cleaning resources with maximum energy efficiency. Light levels, heating, cooling and cleaning are reduced in low-occupancy areas to save time, money and energy.

What it means

Individual employees use the system to create a personal space. For example, the connected luminaires use visible light communications (VLC) to offer services to employees in the illuminated space. VLC sends a code via the LED light beam and the employee's smartphone camera receives this code, registering his or her location. With a smart phone app designed by Philips, the employee can control the lighting above a specific desk, even in an open-plan office. Employees also use the app to adjust the lighting and temperature in meeting rooms. Workspaces can also be customized on an ad-hoc basis to provide the lighting for a particular activity.

Of course, LED lighting is also known for its low power consumption, so energy savings were built in from day one. The expected savings are €100,000 in energy costs and €1.5 million in space utilization costs.
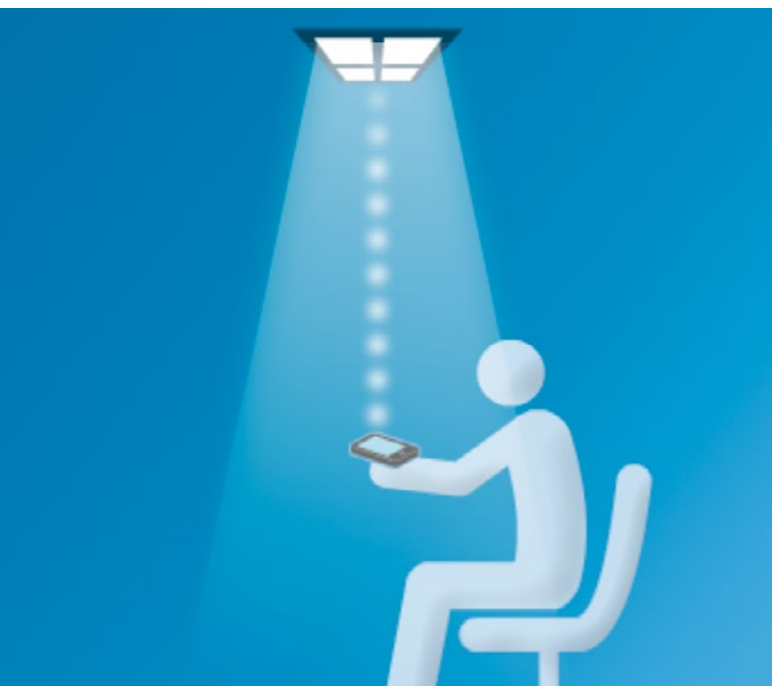
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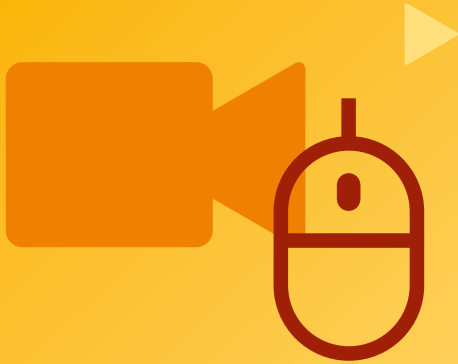
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Watch the movie:
https://youtu.be/yZbbFunxGPU

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Our hope is that other developers will follow this lead and endeavor to create innovative buildings that are in a league with The Edge."

Annemarie van Doorn,
Director of the Dutch Green Building Council

The last word...
The Philips connected lighting system at The Edge is the world's first fully-realized system of its kind.

By communicating and interacting with the environment, office life becomes an immersive experience. Employees personalize their surroundings, thus making the building a more inviting place to work.

The system demonstrates worldwide leadership in sustainable practices and responsive, human-centric working environments, which is shared by OVG, Deloitte, and Philips. Annemarie van Doorn, director of the Dutch Green Building Council, said, "OVG has created an exemplary office building, that has exceeded any other that we have rated worldwide to date. Our hope is that other developers will follow this lead and endeavor to create innovative buildings that are in a league with The Edge."

If The Edge testifies to the end of the desk as we know it, employees and building managers seem to appreciate it. "We are very happy with the design and concept, as are the tenants and workers," Bouman says. "The building itself works. You feel the buzz and you see that everybody is happy. When you see people sitting near the coffee areas, sitting outside from their workspaces and all the features of the building work really well, you can tell The Edge has so far been a success."

An integrated system

Philips connected office lighting using PowerBalance PoE and LuxSpace PoE luminaires

Envision software
Philips Envision is an integrated, end-to-end approach to advanced lighting control, commissioning, and management. Envision manager is a multi-user software application that provides visibility into lighting system operations and energy management. It offers complete control, from a single lamp to the lighting in a multi-story building. Its powerful features include simple scheduling, routine maintenance management, real-time occupancy floor plans, and energy usage analysis for improved efficiency.

Personal Control App
The Philips PCA is a mobile app available for iOS and Android. It uses visible light communications to offer personal control of lighting scenes and room temperature at individual workspaces. The PCA supports personalization even in open-plan offices, putting employees back in control of their working environment.

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