# LOOM Barcelona
Case Study
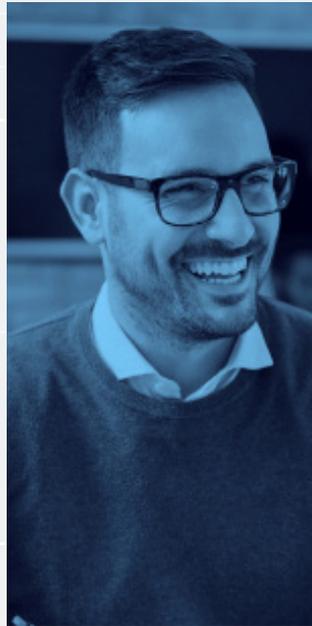
Enlighted and European partner LEDS C4 provided digital services to human centric coworking space's need for occupant comfort, energy efficiency, and superior design.

Overview

LOOM is a 2,500 square-foot, three-floor multi-user office space, located in the Torre Glòries office tower in Barcelona's growing creative and technology district. The flexible coworking space is open 24 hours a day for a growing number of startup, small, and medium enterprises to rent for short- or long-term use, and has created at least 160 jobs.

Property owner Merlin Properties chose Enlighted and European partner LEDS C4 to provide lighting control, connectivity, and digital services solutions to address the unique space's requirements for occupant comfort and flexibility, while optimizing maintenance, energy saving, and efficient management of all spaces in the facility. The partnership between LEDS C4 and Enlighted was seamless – and successful. Enlighted

provided the smart building technology, and LEDS C4's talented connectivity team designed, developed, and supervised the lighting installation for the newly built project. LEDS C4's mission statement is to contribute to peoples' well-being through lighting, which was an ideal fit for a partnership with Enlighted.

Challenges

The architecture of the Torre Glòries building presents challenges for lighting levels, as it features a double-glazed structure. The space, located on high-level floors of the office tower, features floor-to-ceiling windows that ensure natural light all day. As such, the daylight entering the space created the need to comply with the Workplace Standard EN12464 on lighting comfort and glare for the workers.

To address extreme light levels that can affect employee comfort, the LEDS C4 team installed a sophisticated system that can adjust for daylight harvesting and user occupancy.

Because the space is rented by a range of customers, it was also necessary to have a way to control and analyze the degree of occupancy, allowing the space to respond to customer demands. In addition to the rental office space, common areas like meeting rooms, the atrium, and dining areas needed lighting that could be automatically activated depending on occupancy.

By incorporating Enlighted Sensors throughout the project, the LEDS C4 team created a lighting staging approach that can be rapidly and automatically adjusted, depending on available daylight and the needs of occupants. Enlighted Sensors in each luminaire allow the facility to harvest available daylight and automatically adjust to varying lighting conditions. This measure helps

save energy, while substantially reducing the glare and sharp lighting contrasts that would otherwise contribute to employee fatigue.

Lighting designers had to consider both user comfort and natural light levels.

LOOM's flexible, multi-user office space is surrounded by windows that provide abundant natural lighting, which can be leveraged for lighting on sunny days with Enlighted's daylight harvesting capabilities.

The solution

The LEDS C4 lighting project and consultancy unit carried out the lighting project, supervising and monitoring the work from start to finish, including the installation of 150 Enlighted wireless D4i Smart Sensors in individual luminaires.

To create a range of differentiated spaces, the designers relied on the Enlighted system's centralized platform. Enlighted's Energy Manager and interactive platform lets building managers program lighting responses based on time of day, occupancy, and available light. Because the sensor-dense system instantly responds to changes in interior conditions, user movement, and occupancy levels, it can offer a high degree of comfort that creates a seamless and customizable user experience.

The Enlighted Sensors allow each luminaire to operate autonomously, and are self-regulating based on natural light and occupancy. Individual lights and groups of lights can be programmed to adapt to various uses for the space. In turn, the lighting can be customized with remote controls located in every room, with four default setups and fine-tuning buttons for every two workstations. Thanks to this flexibility, adaptation to each user is guaranteed, which brings a high-added value to the installation, ensuring maximum productivity and up to 85 percent energy savings.

Because the windowed space is used 24 hours a day, and has 360-degree natural light entering the building during daylight hours, it was essential for the system to adjust the artificial lighting levels depending on natural light conditions. Avoiding major contrasts in light levels helped to meet the Workplace Standard to avoid occupant fatigue and headaches. The result is a flexible coworking space focused on people's comfort, and tenants say it has helped to optimize their performance and boost their creativity.

Lighting solution

LEDS C4 selected a range of luminaires to meet the varied needs of the LOOM workspace. Enlighted Sensors, housed in each luminaire, collect data about available daylight, occupancy and vacancy, motion trails, temperature, Bluetooth® signals and more.

The luminaires themselves are designed to integrate seamlessly with the building's architecture for an aesthetically inspiring user experience.

Below are some examples:

Infinite Hexa-Cell: Installed in work areas. Guarantees 360º glare reduction.

Tubs: Installed in formal meeting rooms. Provides directional lighting.

Circ: Installed in informal meeting rooms. Provides diffuse lighting.
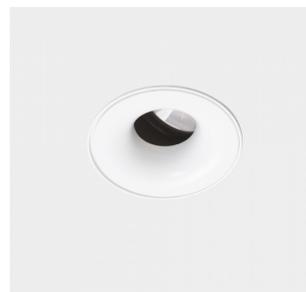
Play Recessed and **Play Surface**: Installed in common areas. Allows directional lighting, and free-style lighting effects are possible.

Attic: Installed in rest and dining areas. The range of geometries adapts to the space to be illuminated.

Connectivity and digital services

In addition to energy savings of up to 85 percent, Enlighted Sensors provide LOOM operators with cloud-based data for real-time reporting and graphic visualization of lighting patterns and flow maintenance.

The networked sensors communicate with a centralized DALI D4i platform, with data available locally and in the cloud, to allow technicians to manage the project remotely, monitor the installation, change the regulation profiles, and visualize the lighting data through graphic panels and data records. Currently, the installation's key data points are energy savings, temperature, and real-time reports of the state of the lighting and their flow maintenance.

Additionally, the Enlighted Space application can be used by third-party applications or APPs via API, or through a BMS system, to provide a number of functions such as customizing the temperature and lighting of the rooms, and effortless online space reservations, that enable a user-friendly workplace.

The Enlighted Sensors power its Space application, which provides data that allows third-party APIs to seamlessly manage desk reservations based on real-time occupancy.

Enlighted Sensors are housed in each individual luminaire. Because lights are everywhere that people are, this creates a dense sensor grid that gathers data on everything that is happening in the building.

Enlighted

Building Robotics, Inc.,
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Turn Everyday Spaces into Extraordinary Places

Wherever space, people and work meet, Enlighted empowers organizations with the technology to transform real estate spaces into regenerative places that fuel positive impact for people, portfolio, and our planet.

Email: info@enlightedinc.com | **Website:** www.enlightedinc.com