A brighter look at lighting energy demand

Sustainability

102 shops

Italy

Energy efficiency

KEY HIGHLIGHTS

- Le Terrazze team found a way to improve energy efficiency with operational changes and without any investment needed. Furthermore, they implemented a strategy to keep results over time, even after operational teams have changed.
- The implemented measures led to electricity savings of around 3%, equivalent to €12,000 per year with no adverse impact on the mall's comfort and safety levels.

SOLUTION

- Documenting 'relevant energy events' (e.g. opening, closure, cleaning schedules etc) which imply different lighting requirements.
- Defining lighting minimum needs for each of the 'events' and establish the links between each BMS control component (BMS buttons) and the circuits controlled.
- Fine-tuning by defining and setting schedules for each lighting circuit.
- Defining a Manual with all configurations and activate different BMS access levels to avoid deviations from optimum control by someone without the access to do so.

KEY NUMBERS

3%
reduction in the total electricity consumption

€12,000
cost savings per year

<1 year
payback period

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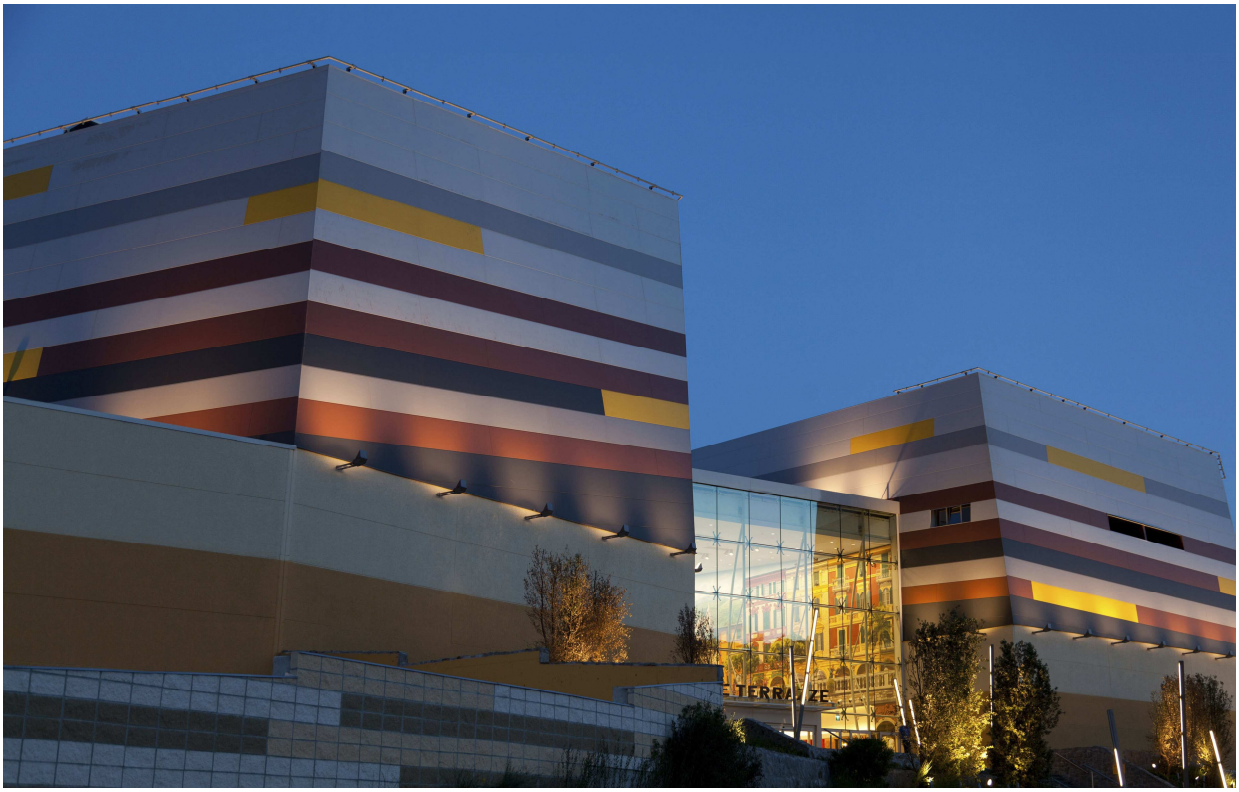

- Le Terrazze
- La Spezia, Italy
- 38,483m²
- 102 shops
- 2,000 parking spaces
- Sustainability

Abstract

Lighting accounts for almost a quarter of the energy consumed across Sonae Sierra's portfolio, so any actions to reduce lighting energy use can make a significant contribution to our energy reduction targets.

The management team at **Le Terrazze** embarked on a forensic optimisation programme to tackle this challenge. By fine tuning the lighting system and intelligently monitoring and adjusting usage patterns, the team identified electricity savings of around 3%, equivalent to €12,000 per year with no adverse impact on the mall's comfort and safety levels.

Not only has the team at **Le Terrazze** achieved meaningful and practical results that can reduce energy consumption at this asset, but they have unlocked opportunities for more significant savings as we look to apply their methodology across our portfolio.

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Introduction

For shopping centres to optimise energy consumption whilst meeting the needs of tenants, consumers and suppliers it is important both to install energy-efficient lamps and maintain adequate control of the lighting system, adjusting lighting levels to attune with daylight levels and service requirements.

Le Terrazze's shopping centre team saw an opportunity to save energy and deliver a lighting strategy better adjusted to commercial needs by undertaking a comprehensive fine-tuning of its lighting control system.

What is more, by better understanding and controlling the lighting systems in place at **Le Terrazze**, the team aspired to deliver practical results that could help reduce energy demand and associated costs at shopping centres across Sonae Sierra's portfolio.

Background

The **Le Terrazze** team came up with a detailed methodology to perform the fine-tuning in line with industry guidance.

First of all, this involved documenting 'relevant energy events' such as the opening, closure, cinema closure, cleaning schedules etc; which imply different lighting requirements.

Secondly, it required the definition of lighting minimum needs for each of the events and the establishment of the links between each control component (BMS buttons) and the circuits controlled.

Following this, the team would be able to carry out the fine-tuning by defining and setting schedules for each lighting circuit according to the service needs at each hour, in every area of the shopping centre.

Challenge

The team wanted to reduce energy consumption and associated costs by improving BMS controls and without any investment. Besides, they wanted this optimal scenario to be kept throughout time, without taking the risk of accidental deviations caused by the constant use of the system by different people or by the changes in the operational teams.

But would it be possible to reduce energy consumption even further just by improving BMS controls? Could the shopping centre maintain the optimal configurations over time with several workers using the BMS?

Solution

Le Terrazze has a Building Management System (BMS) with capacity to control most of the lighting circuits, allowing the user to set individual schedules for different lighting areas.

The team proceeded by setting schedules for each lighting circuit and creating "lighting scenarios" for each shopping centre area and time period. They undertook configuration works through engagement with operational, cleaning and security teams to take into account the commercial, safety and operational aspects. This process included carrying out several walking surveys during business and out of business hours to evaluate lighting levels and ensure that the system's configurations fitted all requirements whilst delivering the highest possible energy savings.

All configurations were then registered in a Manual to ensure that the settings were kept constant and verifiable throughout time and facilitate future reconfiguration if and when required.

Different BMS access levels were activated to avoid deviations from optimum control by someone without the access to do so.

Enabling some of the BMS capacities needed for this project had some cost associated (BMS provider), which in this case was part of the maintenance contract.

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An analysis was undertaken following the changes, with the conclusion that lighting energy savings of 7% had been achieved at **Le Terrazze** (3% of total electricity consumption), equivalent to an annual cost saving of around €12,000. What is more, there were no investment costs associated with the project, and soft skills costs have a payback of less than one year.

Conclusion

At **Le Terrazze**, energy consumption and costs have been further optimised by adjusting lighting levels for each period of the day according to operational team requirements, delivering electricity savings of around 3%, equivalent to €12,000 annually.

By applying the methods piloted by **Le Terrazze**, other shopping centres in Sonae Sierra's portfolio will be able to unlock the opportunity to reduce lighting energy demand. In other assets without a fully configurable lighting control system (e.g. BMS), the payback period should be higher due to an initial investment.

Night time survey of mall lighting at **Le Terrazze**.