LEDCity

PROJECT REPORT.

Sihlcity

SIHLCITY

Kalanderpl. 1, CH-8045 Zürich.

APRIL

2024

sihlcity

Industry.

The client operates in the Real Estate Management industry.

Application.

The stairways, corridors, adjoining rooms, and technical rooms of a shopping center.

Luminaires.

A total of 3’371 Semi-Autonomous Tubes (SA) were installed.

Savings.

Thanks to LEDCity, an estimated 93% of total energy can be saved compared to the previous installation.

Introduction.

The shopping and entertainment center along the river ‘Sihl’ in Zurich describes itself as the future-oriented realization of an idea of urbanity. Aligned with this approach, the mall has also chosen to be a pioneer with their lighting by installing more than 3'300 intelligent LEDCity light sources. In addition to their integrated intelligence, the lights are also exceptionally energy and cost-efficient. The outcome: Our customer enjoys energy savings of 93%, which result in substantial cost savings of nearly 120'000 francs per year.

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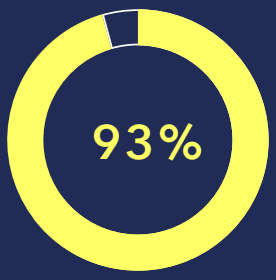
LEDCity

Overview.

1'776

Tons CO_2 emissions saved



Less energy consumption compared to the previous installation

Light sources

3'371

SA

Applications

Corridors

Staircases

Adjoining rooms

Total savings *

118'348

CHF saved per year

Investment costs

461'152

CHF

	Luminaires before	Luminaires after
Type used	FL-tubes 1.15m & 1.2m	LEDCity 1.2m SA
Power	54W & 36W	18W
Form	T5 & T8	T5 & T8
Luminous Efficiency	82 lm/W	150 lm/W
Lifetime	30'000 h	70'000 h

* Calculations based on the following values: 0.2 CHF / kWh, 150g CO2 / kWh, and for the old installation an operating time of 10 hours per day and 6 operating days per week.

More than 3'300 LEDCity lights in the shopping palace of Zurich.

Unnessesary light leads to high bills.

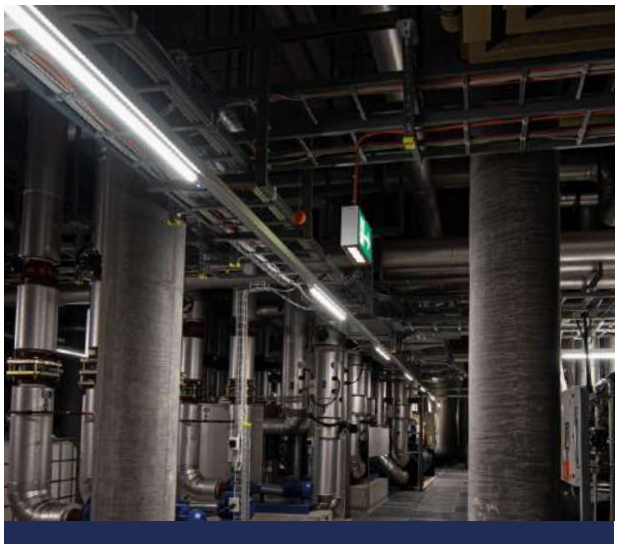
The lighting is on during most of the opening hours, the luminaires are inefficient and obsolete, and the client is confronted with an incredibly high energy bill: that was the situation in the shopping center Sihlcity. Some time ago, the customer had already installed motion detectors with the hope of reducing operating hours in stairways, corridors, and other rooms. In vain. Despite the complex installation and wiring of the motion detectors, the stairways lights, for instance, remained illuminated for a staggering 16 hours. Why? Motion detectors control the light only very sluggishly due to the central control system. This means that one single movement triggers light sources of a large area instead of local illumination. When a visitor walked through the stairway, the lights on the first floor remained lit even though the person had already reached the fifth floor. Shortly after, a new visitor is detected by the motion detectors, and all light sources stay turned on. This cycle repeats the whole day, leading to continuous illumination.

Simple solution allows effective change.

To tackle this problem, the customer started looking for a sustainable, future-oriented, and, of course, highly cost-saving solution and discovered LEDCity's innovative approach.
Therefore, the owner of the shopping center Sihlcity made the decision to replace a total of 3,371 luminaires. The installation of the lighting system is very simple, as all required sensors and control components are integrated into each light source.

Furthermore, in contrast to prevailing industry trends, LEDCity relies on a modular approach based on a cross-manufacturer standard. This approach offers the customer a distinct advantage – they can use their existing rail system, allowing for an effortless insertion of intelligent light sources.

So, if a light source fails, there is no need to replace the entire luminaire. This is not only cheaper, but also more sustainable. In other applications the fixtures were already quite old, which is why the whole luminaire was replaced by request.
The term "Plug-and-Play Lighting System" characterizes the solution: simply plug in the light sources and start saving energy from the very first second.



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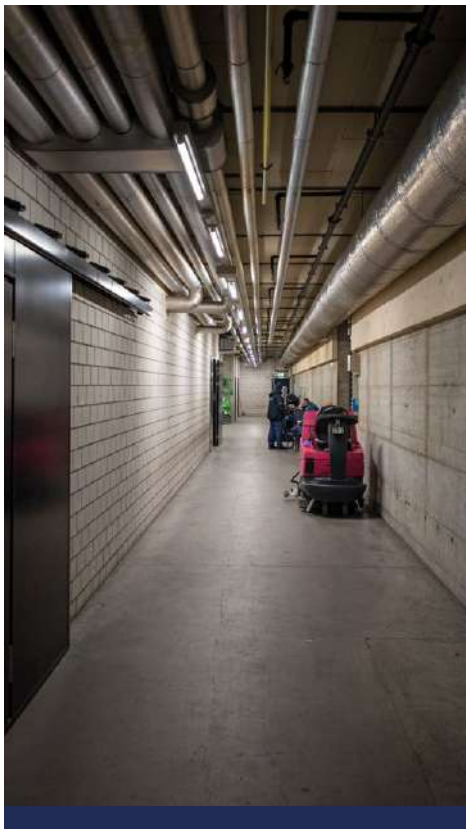
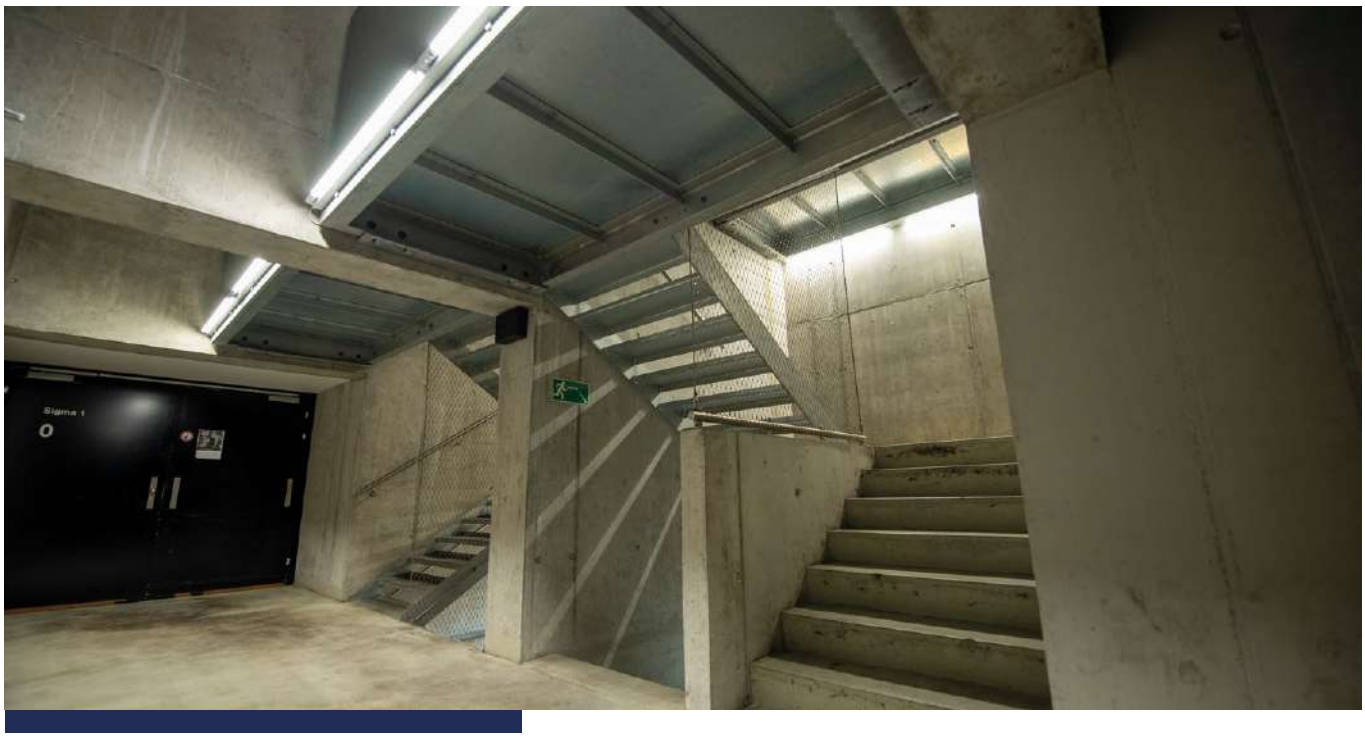
Decentralization and automization of light.



Well, how is it possible that our lights save so much energy?

While the previously installed system led to long operation times of the luminaires, the solution provided by LEDCity is decentralized and directs light exactly where it is needed. Thanks to the integrated sensors, light sources only dim up to 100% once a visitor is close by. So compared to before, only the walked through part of the corridor or stairway dims up, not the whole area. Another factor that minimizes the operation time is short follow-up times. With most motion detectors, the luminaires stay illuminated for 10-15 minutes after the last detection. With LEDCity, this follow-up time could be reduced to 15 seconds – depending on individual requirements. For the technical rooms previously equipped with light switches, always remembering to switch off the light after leaving the room was not guaranteed. This drastic shortage of operation times does not only reduce electricity consumption, but also increases the lifetime of the light sources. And of course, automating the lighting control leaves no opportunity for anyone to forget to shut off the light after leaving the room.



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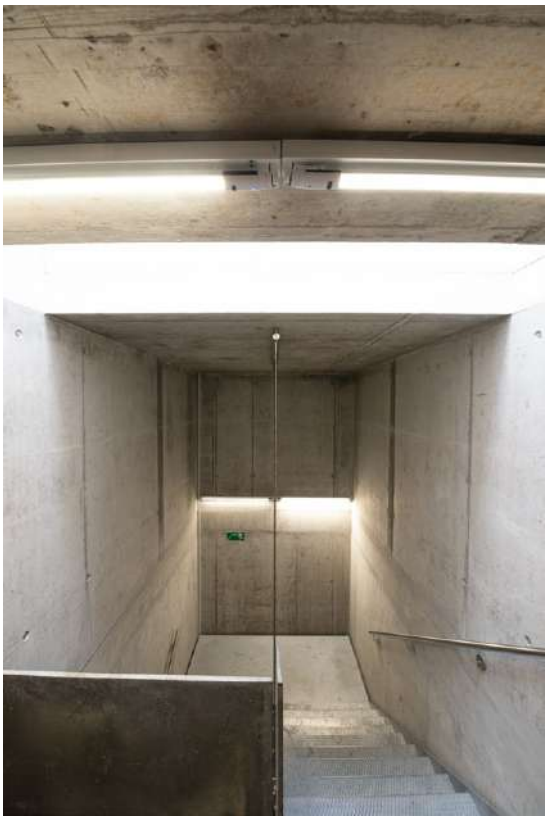
Costs savings of CHF 118'348 per year.

Reducing operation hours of the luminaires results in a significant reduction in energy consumption. Certainly, this is environmentally beneficial as well as economically advantageous for the customer. Less energy usage leads to less costs on the energy bill, especially since the drastic rise of the energy price. The lifetime of LED-City light sources is more than twice the lifetime of the previously installed FL-tubes which means that light sources do not have to be replaced as frequently. This does not only reduce the workload of the maintenance team, but also minders costs for the material. Thanks to total cost savings of CHF 118’348 per year, after less than 4 years, the investment will already be paid off. Because of those efforts towards energy efficiency, this project was supported with CHF 63’000 by ProKilowatt, a subsidy program from the Swiss Federal Office.



Through the enormous reduction of the energy consumption, the new lighting solution of the shopping center ‘Sihlcity’ aligns with its vision of a future-orientated building and consequently contributes to fostering a sustainable future.

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