

LEDCity

Project report

# THE DOLDER GRAND

**-85%**  
ENERGY SAVINGS

**CLIENT**

Dolder Hotel AG  
Kurhausstrasse 65  
CH-8032 Zurich

27<sup>th</sup> April 2019

# SAVING ELECTRICITY CONSUMPTION OF 700 SWISS HOUSEHOLDS



Together with LEDCity, the Zurich luxury hotel «The Dolder Grand» has equipped a large part of its linear lighting in the garage, staircase and corridor with intelligent LED tubes.

## BEFORE THE CHANGEOVER

An initial inventory showed that prior to the retrofit, three different types of luminaires were installed in the hotel, each of which was completely replaced annually:

Garage	Corridor	Staircase & corridor
1.5m	1.5m	1.2m
35 W	58 W	36 W
T5	T8	T8

## PRODUCTS USED

The calculation basis for the savings potential was the service life of the fluorescent tubes (1 year, since they are replaced annually) and the ballast (100,000 h), the conversion time of the fluorescent tube replacement (0.05 h), the cost of the fluorescent tube (2.60 CHF), the hourly rate of the facility personnel (60 CHF), as well as the electricity costs (0.16 CHF / kWh) were included. This result-

	Luminaires before	Luminaires after	Luminaires after
Type used	T8 58W 1.5m	LEDCity 1.2m semi-autonomous	LEDCity 1.5m semi-autonomous
Power	58 W	19 W	23 W
Form	T8	T5 & T8	T5 & T8
Color code	830	830	830
Color temperature	3000 K	3000 K	3000 K
Light flux @ 25° C	4450 lm	2700 lm (satin)	3400 lm (satin)
Luminous efficiency	89 lm/W	150 lm/W	150 lm/W
Efficiency class	A+	A++	A++
Socket	G5	G5	G5
Operating time (full power)	19.5 h / day	1.4 h / day	1.4 h / day

ted in estimated expenses with the existing lighting of approximately CHF 200,669 over five years. But what do these costs look like when LEDCity products are used? By using semi-autonomous LED tubes, a large part of the energy can be saved in the main entrance, the garage and in the corridors, which was wasted before the changeover. Now the tubes only light up at full power when a person is nearby. In the garage, the set dimming value is 30 percent, in the stairwell and corridor even only 20 percent. This ensures that there is always a pleasant basic light, but it is many times more economical than with classic FL tubes. In the case of the Dolder Grand, the sockets of the luminaires in the parking garage had to be replaced to allow the installation of the sensor tubes in the first place. With our modular system, however, this is possible without any problems. Incidentally, the sockets are a very vulnerable component that tends to become brittle. By replacing the socket you can also ensure that flawless luminaires and tubes do not have to be disposed of prematurely, but can very easily continue to be used.

### **FEDERAL FUNDS**

The hotel has been striving to reduce its energy consumption for a long time and is implementing various energy projects together with the EnAW. Thanks to the retrofitting described here, the Dolder was able to achieve its energy targets and thus received federal subsidies.



### **HIGH POTENTIAL**

The first calculation before the pilot project assumed cost savings of 102,560 Swiss francs in the first five years. However, energy measurements after the comprehensive retrofitting have now shown that annual savings of over 50,000 Swiss francs can be achieved, which raises the above-mentioned figure for the five-year average to around 250,000 Swiss francs. This means that the hotel not only scores points in environmental terms, but has even paid off the retrofit after less than three years and will continue to enjoy this energy-efficient lighting for another six to eight years before the luminaires have to be replaced again. The annual replacement of all fluorescent tubes is a thing of the past!

# THE PROJECT IN FIGURES

Investment costs [CHF]:	140'000
Total energy savings per year [CHF]:	51'000
Number of tubes installed [n]:	1500
Annual cost reduction per illuminant [CHF]:	34
Energy saving [%]:	85
Equivalent annual household consumption CH [n]:	770

## STROMVERBRAUCH ÜBER DEN TAG VERTEILT



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VIEW  
PROJECT  
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