

LEDCity

Project report

# ZURICH UNIVERSITY OF THE ARTS

**-92%**  
ENERGY  
SAVINGS

**CLIENT**

ZHdK

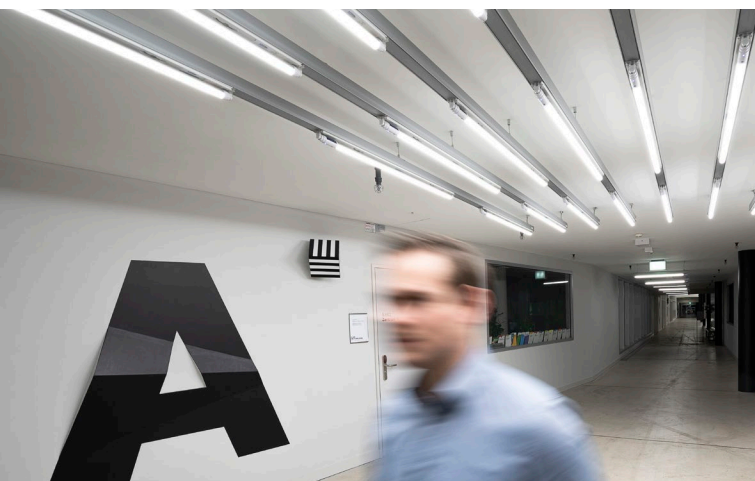
Pfingstweidstrasse 96

8005 Zürich

27. April 2019

# CONVERSION TO SMART LIGHTING AT ZHDK

The ZHdK building on the Toni site in Zurich possesses a large number of fluorescent tubes for its lighting: formerly exclusively via conventional FL tubes, now also a considerable amount of intelligent, sensor controlled LEDCity tubes.



## PILOT PROJECT

In an initial pilot project in September 2017, around 40 FL tubes were replaced by the semi-autonomous LED tubes from LEDCity in a building orridor. Typical with any project, various parameters have been measured before the retrofit in order to determine the actual improvement after a testing phase (lighting duration, effective usage time, energy consumption and luminous intensity). The pilot phase resulted in a 92 percent decrease in the consumption of electrical energy. The annual energy costs per fluorescent tube fell from 64.70 to 5.40 Swiss francs. This equals a saving of 395 kilowatt hours or the equivalent of a total saving of around seven average Swiss households per lamp and year for the fluorescent tubes in the pilot project alone.

## GREAT CONVERSION

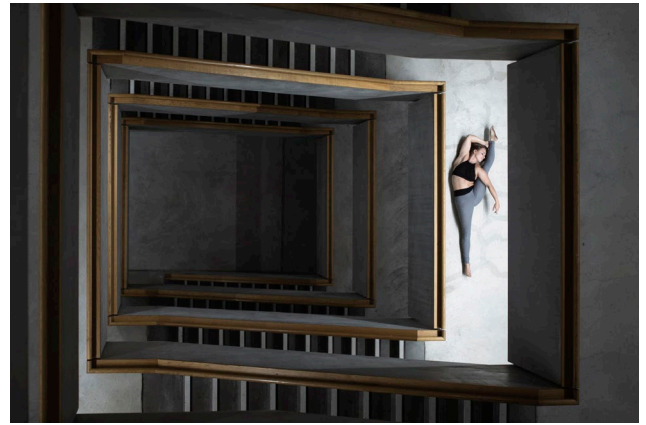
Convinced by this successful conversion, in a second step the modernization work was started at other locations as well. In the meantime, throughout the building 320 LEDCity tubes are in use and save around 19,000

	Luminaires before	Luminaires after
Type used	T5 Eco Saver HO Long Life	LEDCity T5 semi-autonomous 1.2m
Power	50 W	18 W
Color code	840	840
Color temperature	4000 K	4000 K
Light flux @ 25° C	4450 lm	2700 lm (satin)
Luminous efficiency	89 lm/W	150 lm/W (satin)
Efficiency class	A+	A++
Socket	G5	G5
Operating time (full power)	17.2 h / day	2.4 h / day

Swiss francs a year in terms of energy costs. As the entire control system is integrated into the individual lamps, there is no need for complicated renovations and the maintenance costs could also be drastically reduced. Since there is no longer a need for a control system that can be very intensive in terms of maintenance. The decentralised system of LEDCity is independent and error resistant.

### **FACTOR TIME**

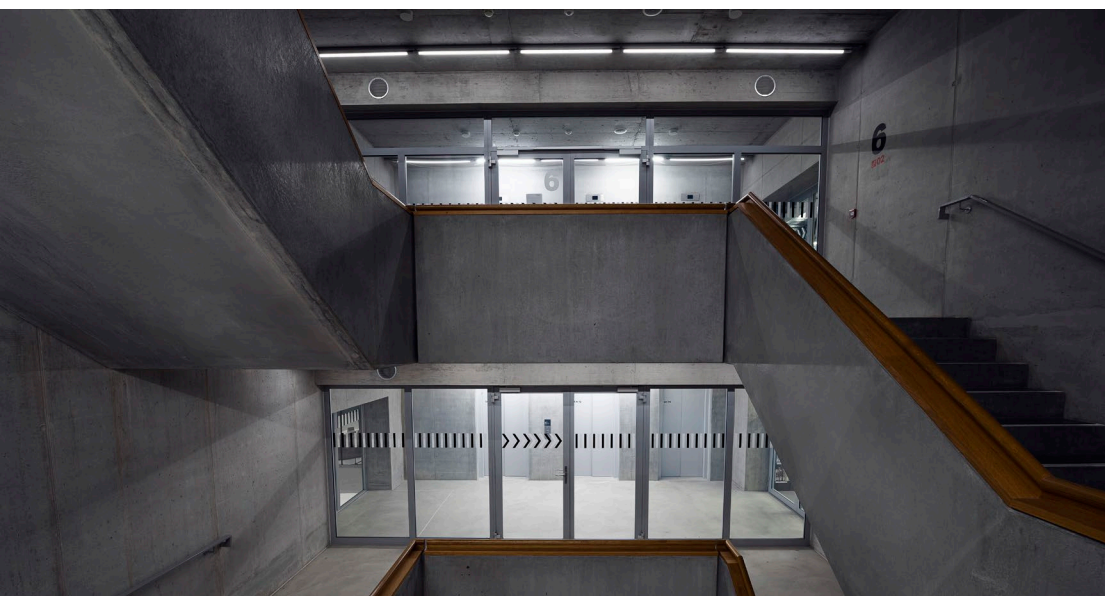
The LED luminaires used are highly efficient and, due to their high-quality construction, have an above-average service life. The biggest difference is that, among other things, thanks to the radar sensors integrated in the tube, light requirements can be met much more precisely: The original lamps were controlled by a motion sensor and switched off 30 minutes after the last movement. In practice, this meant that the light in the entire building was switched on practically from morning to night (17.2 hours). With run-on times of, in this specific project, 15 or 30 seconds for the (semi-)autonomous LED tubes, the light is dimmed very quickly as soon as person is no longer in the vicinity of the lamp (according to measurements, full power is only necessary for 1.5 hours per day). The



time factor has a much greater influence on the savings potential than the consumption of the individual tubes. In some parts of the building, the light is controlled even better than in the pilot project. Thus, the savings in lighting amount to 85-92% depending on the area or measuring point. And mind you: On top of that, the measured light intensity increased.

### **AMORTISATION**

The enormous cost savings in electricity make the required investment become a minor matter, since the new lighting system is amortised after only two years - not even counting the savings in maintenance costs. The estimated life of the LEDCity tubes used is around ten years on average. The measures taken are therefore proving their worth from an ecological, as well as an economic point of view.



# THE PROJECT IN FIGURES

Investment costs [CHF]:	32'000
Total energy savings per year [CHF]:	19'000
Number of tubes installed [n]:	300
Annual cost reduction per illuminant [CHF]:	63
Energy savings [%]:	92
Equivalent annual household consumption CH [n]:	53

## ENERGY CONSUMPTION THROUGHOUT THE DAY



Interested in a conversion? We would love to consult you at no charge and without obligations. We are looking forward to hearing from you.

### CONTACT

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**ETAVIS** 

**ledcity.io**

VIEW  
PROJECT  
ONLINE

