Change now to LED: better light and significantly lower electricity costs

The widely used fluorescent lamps are disappearing from the market. Modern LED lamps and intelligent control systems are an optimal replacement. Replacing your lighting pays for itself financially in a short time, and the quality of light improves immediately.

The fluorescent lamp (FL lamp or "neon tube") has become obsolete – since autumn 2023, it may neither be manufactured nor imported throughout Europe. This means that several million lamps in Switzerland will have to be replaced with LED technology in the next few years.

Modern LED lighting with intelligent control reduces electricity costs by up to 95 percent.

A unique opportunity for better light

LED lamps have a much better light quality than fluorescent lamps. Pleasant light at the workplace is an often underestimated prerequisite for productive work.

Intelligent control with LED

LED lamps are easier to control than conventional lamps and make much better use of the potential for efficient, economical operation. The light adjusts to your needs at all times. As a result, intelligent dimming in combination with daylight enables sophisticated and astonishingly economical lighting solutions.

Content **Page**

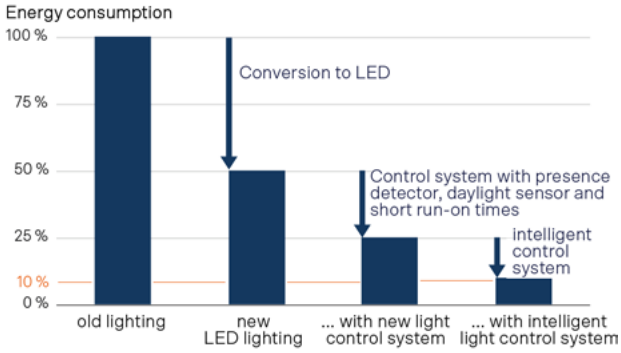
The replacement of the old lighting is a stroke of good luck

There is no reason to mourn fluorescent lamps, because the "ban" (see box) presents great opportunities. New lighting brings better light and has been proven to increase work performance in companies. In addition, electricity costs can be reduced by 50 to 95 percent. The investment usually pays for itself in two to ten years.

There is great potential for savings in the lighting system as a whole

A new lighting system not only includes the conversion to LED technology. Intelligent lighting control is just as important as the new lamps. It is also essential that the new lighting is perfectly adjusted by a specialist during commissioning.

This is how you reduce energy consumption:



FL lamp, fluorescent lamp, "neon tube" or energy-saving lamp?

In common usage, these terms are often used synonymously; the correct technical term is fluorescent lamp. They are available in different designs: tubular, ring-shaped or rod-shaped, with a plug-in or screw socket.

How to successfully change over to LED

In any lighting project, no matter how large or small, a structured approach is the key to success.

1. **Inventory**
   Analyse your needs and the existing lighting.
2. **Finding solutions**
   Decide how you want to approach the replacement (see page 16, point 7).
3. **Request offers**
   Compare the offers.
4. **Apply for funding**
   Clarify whether the contractor will handle processing (see page 16).
5. **Place an order**
   Confirm the order in writing (simple contract for work).
6. **Realisation**
   Supervise the work.
7. **Adjustment of the lighting**
   Have the control system properly adjusted before acceptance.
8. **Acceptance**
   Check that the finished installation fully complies with the order description.

Why are FL lamps "disappearing"?

The classic incandescent lamp was already banned in 2009 because of its poor energy efficiency. Since September 2023, this also applies to most halogen lamps. Fluorescent lamps, on the other hand, contain hazardous substances such as mercury. As a result, they may no longer be manufactured and imported in Europe and Switzerland as of August 2023. After that, the stocks will be sold off. All installed and purchased lamps may still be used. However, experts assume that the FL lamps will be sold out quickly and that the change to LED technology is inevitable.

First analyse the existing lighting

For existing lighting installations, the requirements have often changed since installation. Renovation is a good time to update expectations for light. A good analysis includes the following five steps:

Step 1: Call in a specialist

A specialist (e.g. for electrical installation, lighting design, lamp supply) advises you on technical and design issues and coordinates the implementation of the project. Ask about successful LED reference projects.

Step 2: Inventory

The specialist describes the lighting for each room. At least the following points must be documented for all lighting fixtures and rooms:

- ☐ **Room use** and changes since the installation of the lighting.
- ☐ **Illuminance:** Compare the measured values of the current lighting with the prescribed values (see page 10).
- ☐ **Uniformity of illuminance:** For this purpose, the floor plan of the room is sketched, the lighting fixtures are drawn in and – depending on the size of the room – the illuminance is measured and documented at several points.
- ☐ **Positioning of the lighting fixtures:** Are they still located where they are most useful?
- ☐ **Control system:** Description of the control system and its elements (e.g. dimmable lighting fixtures) as well as the installed networking options (DALI bus, EIB/KNX, Bluetooth, etc.).
- ☐ **Condition of the lighting fixtures:** Are the materials made of high-quality metal or are they yellowed and brittle elements made of plastic? Can trays and reflectors be cleaned or diffusers replaced?

Step 3: Requirements and expectations

Record the initial situation of the project in writing. Describe your requirements (appearance, functionality, etc.) and the corresponding basic conditions (foreseeable changes in use, budget range, etc.).

Step 4: Suggested procedure

The specialist develops a concept on how the lighting can be renovated. The concept must comply with the current standards (see pages 8 and 10).

Step 5: Evaluation and implementation of decision

Discuss the results of the inventory and the suggested procedure with the expert. In which rooms is which solution most suitable? (More on this on the next page.) Why is this approach recommended?

Different approaches lead to attractive, efficient light

There are four solutions for modernising lighting – from converting individual lighting fixtures to replacing the entire lighting system. Solution D (retrofit with LED tube) is usually only considered during a transitional period.

On the basis of the analysis, your specialist will recommend which solutions are ideal for the respective rooms and for your situation.

Solution A
Convert existing lighting fixture to LED
- with existing high-quality housings in good condition
- best solution for valuable individual lighting fixtures
- resource-saving

(see page 5)

Solution B
Replace FL lighting fixture with identical LED lighting fixture
- often the simplest solution for downlights, track systems and beam lighting fixtures
- minimal installation effort

(see page 6)

Solution C
Replacement with newly planned LED lighting
- best choice if the old installation no longer meets the current requirements
- optimal use of all advantages of modern LED technology and new control options
- highest potential for energy savings, reducing electricity costs by up to 95 percent

(see page 7)

Solution D
Replacement of the FL lamp with an LED tube
- suitable in rooms with low visual comfort requirements
- fast, cost-effective retrofitting
- often not in accordance with the requirements of the Labour Code; in such cases, only a suitable option as a short-term transitional solution

(see page 15, box in right column)

Convert well-preserved and high-quality lighting fixtures

Requirements

Conversion to LED is suitable for lighting systems with several identical lighting fixtures in good condition. In addition, lighting fixtures for which manufacturers offer conversion kits are suitable for this purpose. Retrofitting is also worthwhile for high-quality lighting fixtures (individual fixtures worthy of protection). In any case, have the installation effort carefully checked. Often the reflectors can be reused or replaced with so-called diffusers. If necessary, a preliminary inspection can provide clarity on lighting quality and costs.

Converting a lighting fixture conserves natural resources because components are reused.

Who converts the lighting fixture?

Some manufacturers offer the conversion of their lighting fixtures. In addition, there are innovative lighting and electrical companies that have many years of experience with conversions.

Don't forget the lighting control system

When the lighting fixture is converted, a modern control system can often also be retrofitted. The time-consuming additional installation of control wires is no longer necessary. Today, there are inexpensive control elements with which the lighting fixtures can also be operated wirelessly (Bluetooth).

LED conversion kits

With an LED conversion kit, for example, existing linear lighting fixtures or light channels can be easily converted. The old tubes, sockets and ballast are removed. Then the new power supply unit and the LED conversion kit are clicked into place. LED conversion kits are also available with intelligent control (DALI, Zigbee).

Example of lecture hall lobby at Swiss Federal Institute of Technology (ETH) in Zurich

The design lighting fixtures were equipped with modern LED lamps. The classic design of the original lighting fixtures has been preserved.

Example of free-standing lighting fixtures in offices

In thousands of offices, there are free-standing lighting fixtures with compact fluorescent lamps. The existing lighting fixture head can often be replaced by a head with an LED module with little installation effort.

before

after

Replacement with an identical LED lighting fixture

Requirements

With all standardised lighting systems, replacement with an identical lighting fixture (1:1 replacement) is possible. Typical examples are so-called downlights, strip lights, louvre lighting fixtures, track systems or batten lighting fixtures. Their standardised installation dimensions make them easy to replace.

When is a replacement a good idea?

In a 1:1 replacement, for example, a downlight installed in the ceiling is dismantled and replaced with an identical LED downlight. This kind of replacement is possible in many situations. It is simple and requires no or minimal planning effort.

Consider other solutions

With the 1:1 replacement of the lighting fixtures, you maintain the status quo of your lighting situation. Therefore, first check whether the existing lighting concept still meets your requirements in terms of

- illuminance
- uniformity, and
- glare

Otherwise, consider a different solution. The new lighting must meet your current requirements and the standards (labour law, safety, etc.).

Always include the control system in your thinking

Even with a 1:1 replacement, you need to think about the lighting control system. If necessary, a bus cable can be retrofitted; however, this would result in additional costs. Instead, consider a suitable wireless system with Bluetooth.

Examples of standardised lighting systems

Strip light

Recessed lighting fixture

Track system

Downlight

Hanging lighting fixture

Plan new lighting and benefit from outstanding light

Requirements

If the analysis shows that replacing the entire lighting system is the best solution, professional planning is imperative. This offers a unique opportunity to obtain high-quality lighting with low energy and operating costs. The investment costs usually pay for themselves in two to ten years. Then you benefit from the low energy costs of your new lighting.

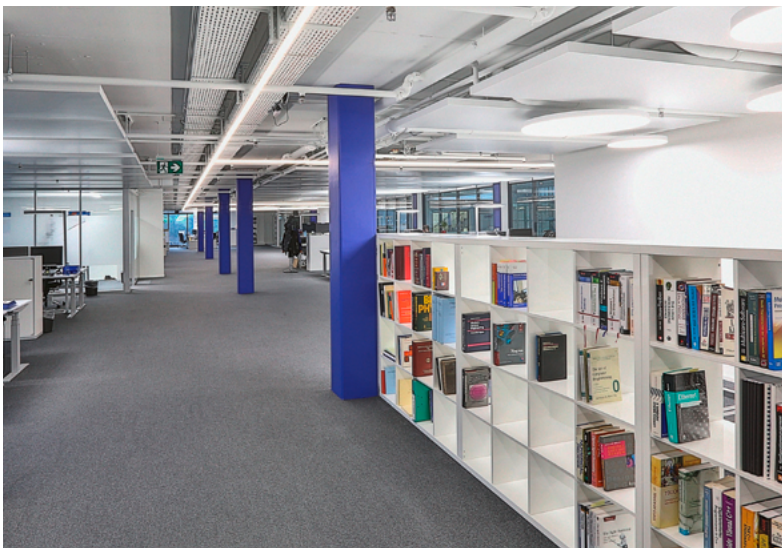
How to go about it the right way

Have a specialist prepare a proposal for replacing the entire lighting system with LED lighting (including the control system, commissioning with adjustment, etc.). The new lighting system must take into account the results of your stocktaking and the basic conditions (see page 3). Give the bidders the checklist for offers (see page 8) with the check points which must be taken into account. This will provide you with better quality offers that you can compare more easily.

What does a new lighting system cost?

The cost of a new lighting system depends on various individual factors and can vary greatly. On the basis of the evaluation of various funding measures and the experience of experts, the following benchmarks result for different uses:

Use	Typical costs CHF/m²	Note
Office	90–120	Elegant solution up to CHF 250/m²
School	90–140	
Sales area	80–160	
Production	60–120	
Warehouse/ storage hall	40–50	
Parking garage	20–40	Retrofit approx. CHF 10/m²



What to do on a tight budget

Whether for a school building or office building, you can also carry out the lighting replacement in stages. Dismantle the lighting fixtures in one or more rooms and install modern LED lighting with an intelligent control system. Keep the operational FL tubes as replacements for the tubes in the other rooms. Replace the next rooms in the following year until the entire building has been converted to LED lighting.

Rent your new lighting system

There are offers from various lighting fixture suppliers, utilities and contracting companies with which the new lighting installation can be rented or purchased via a financing model (contracting) with monthly instalments.

Supplement to the offer

Our services for good lighting

Our offer corresponds to the recommendations of SwissEnergy. We confirm that we have taken the following points into account in our offer:

☐ **Energy efficiency**
The lighting offered fulfils the
- ☐ limit value according to SIA 378/4
- ☐ maximum value for funding by ProKilowatt
- ☐ target value according to SIA 378/4

☐ **Lighting quality**
The lighting offered meets the requirements of the SN EN 12464-1 standard "Light and lighting – Lighting for workplaces" with regard to
- ☐ the minimum illuminance
- ☐ the maximum glare (UGR value)
- ☐ compliance with the uniformity of illuminance (U_o value)
- ☐ the minimum requirements for colour rendering (R_a value)

(see page 10 in the fact sheet[1])

☐ **Light calculation for the room**
The lighting has been designed with a simulation (with Relux, Dialux, etc.). Identical rooms are only simulated once.

☐ **Central key data**
There is a data sheet for each lighting fixture in the offer. This includes at least the following information: system output (incl. control gear) in W, luminous efficiency in lm/W, colour rendering R_a value, dimensions in mm and information on the interchangeability of components.

☐ **Dimmable lighting fixtures**
The lighting fixtures offered are dimmable.

☐ **Control system**
The offer provides for an intelligent control system for the lighting (see page 9 in the fact sheet[1]).

☐ **Commissioning**
The lighting solution is commissioned professionally (see page 10 in the fact sheet[1]).

☐ **Adjustment**
The lighting solution is adjusted professionally (see page 10 in the fact sheet[1]). In addition, the costs for the adjustment are shown separately in the offer.

☐ **Funding**
The offer shows which subsidy programmes are eligible, how high the expected financial contributions are and whether the provider applies for the subsidies on behalf of the client.

☐ **A contract partner**
The quotation shall indicate who is the contract partner for the entire lighting installation. The responsible person takes responsibility for the entire project (see page 16 in the fact sheet[1]).

☐ **Repairability**
The offer shows whether and to what extent the lighting fixtures can be repaired, how the availability of spare parts is guaranteed and where they can be obtained.

☐ **Guarantees**
The offer provides information about the guarantee period of the components.

Date

Signature

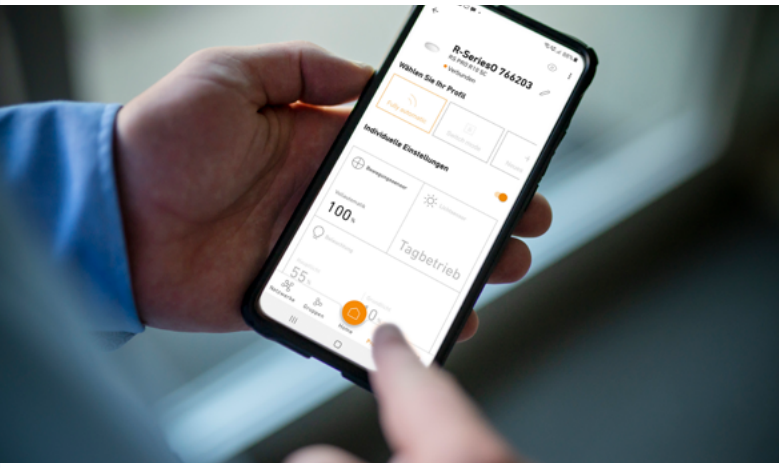
Company

Submit this page to the company making the offer. Ask them to tick the applicable items ☐ and include the signed sheet with the offer.

×

[1] Fact sheet "Change to LED now: better light and significantly lower electricity costs", SwissEnergy 2023.

The intelligent control system makes the difference



Enormous progress has been made with LED technology in terms of lighting control and sensor technology. Today, LED lighting can be dimmed easily, cost-effectively and without loss. Good LED lighting fixtures are equipped with an intelligent control system[1] and can be controlled via a bus system or wirelessly (Bluetooth).

If you save on the control system, you lose comfort and money!

The intelligent lighting control system performs several functions:

- **Daylight control and dimmers** mix only as muchartificial light with the existing natural lightas is actually needed.
- The **sensor** (motion detector, presence detector, etc.) switches the light on only where it is needed.
- If the person leaves the occupied zone, the sensor detects this and switches the light off after the set **run-on time**.
- The **swarm control** directs the light through the room with the person (see page 12).

Integration in bus systems

If a higher-level control system or a bus system (DALI, KNX, etc.) is available, the new lighting should be integrated in it if possible. If the lighting fixtures are converted (see solution A) or replaced 1:1 (see solution B), dimmable LED drivers must be retrofitted.

Adjustment via Bluetooth

The wireless control (Bluetooth) does not require any additional cables. Bluetooth-capable lighting fixtures can be easily networked to form groups. They can be conveniently controlled with an app or a button. This kind of wireless control with Bluetooth is a cost-effective solution worth considering, especially for a 1:1 replacement or for converted lighting fixtures.

Daylight-dependent control

In rooms with daylight, savings of 30 percent and more can be achieved with a control system that always adjusts the proportion of artificial light to daylight. The use of daylight sensors is worthwhile not only in industrial buildings with shed roofs (see example on page 13) and in schools and offices with large window areas, but also in many other places, such as stairwells with windows (see example on page 14).

Dimming is mandatory

In order to be able to regulate the lighting, the LED lighting fixtures must be equipped with adjustable or dimmable ballasts and a control option (app, button). At modern manufacturers, dimmable LED lighting fixtures hardly cost more than non-dimmable lighting fixtures. Dimming also significantly increases the life of the lighting fixture.

[1] With intelligent lighting, the individual lighting fixtures are networked with each other. Each lighting fixture has its own light sensor that adjusts brightness and lighting time to the effective need.

Correctly adjusted lighting saves up to an additional 30 percent

Commissioning and professional adjustment

By professionally adjusting the lighting system, you can save up to 30 percent on electricity costs, provided you use dimmable lighting fixtures. That adds up to a considerable amount over the years. Obligate your contractor or specialist to correctly adjust all parameters of the regulation after commissioning.

This includes the following tasks:

- Measure and correctly adjust the illuminance. Often the installed illuminance is over-dimensioned due to excessively high standard "safety margins" and in many cases can be reduced by 30 percent or more.
- Adjust the threshold value of the daylight sensor to the individual situation.
- Set the run-on times of the presence detectors as short as possible. With LED lighting, the run-on times can be reduced to one minute in accordance with the SIA recommendation.

Readjustment after three to five years

Over the years, the illuminance decreases (soiling, ageing of the components). With a good control system, it can be easily readjusted if necessary.

Have the costs for readjustment shown separately in the offer as an option. This will give you an indication of the user-friendliness of the new lighting system. High costs are an indicator that readjustment of the control system offered is expensive. Low costs show that readjustment is easily possible.

Some important lighting characteristics for orientation[1]

Use	Reference No. SN EN 12464-1	Illuminance factor Lux	Glare (UGR value)	Colour rendering index (R_a value)	Uniformity (U_0 value)
Individual, group, open-plan office	34.2	500	≤ 19	≥ 80	≥ 0.6
Meeting room	34.5.1	500	≤ 19	≥ 80	≥ 0.6
Classroom	44.1	500	≤ 19	≥ 80	≥ 0.6
Sales (food, clothes, shoes, etc.)	35.1	300	≤ 22	≥ 80	≥ 0.4
Restaurant (self-serve)	37.4	200	≤ 22	≥ 80	≥ 0.4
Assembly work (rough work)	19.5.1	300	≤ 25	≥ 80	≥ 0.6
Assembly work (medium-fine work)	19.5.2	500	≤ 22	≥ 80	≥ 0.6
Warehouse (open)	13.4	200	≤ 25	≥ 80	≥ 0.4
WC, bath, shower, wardrobe	10.4	200	≤ 25	≥ 80	≥ 0.4
Traffic areas	9.1	100	≤ 28	≥ 40	≥ 0.4
Stairwell	9.2	100	≤ 25	≥ 40	≥ 0.4
Parking spaces (not publicly accessible)	42.2	75	--	≥ 40	≥ 0.2

[1] The exact requirements are described in SN EN 12464-1 "Light and lighting - Lighting of workplaces - Part 1: Indoor workplaces". The values of SN EN 12464-1 must be complied with – in accordance with the Labour Code – at the workplace (see also Guidance to Ordinance 3 to the Labour Code, Section 2, Art. 15 Lighting).

With careful acceptance you will obtain better results

Insist on a professional handover

After commissioning and adjustment, carry out an acceptance test of the lighting system.

During acceptance, make sure that all the services offered have been provided. In addition, complete installation documentation must be provided. In it, the planning values and the actual adjustment values must be documented for each room:

- ☐ Lighting fixture (manufacturer, designation)
- ☐ Number of lighting fixtures
- ☐ Illuminance
- ☐ System output incl. operating devices
- ☐ Light colour
- ☐ Glare
- ☐ Rated output of the lighting fixtures
- ☐ Adjusted maximum operating output of the lighting fixture
- ☐ Control system (type, function)
- ☐ Supply address for spare parts
- ☐ Safety certificate (SINA)
- ☐ Guarantee services

etc.

Check whether all points of the offer checklist (see page 8) are fulfilled. Create an acceptance report in which all fulfilled services as well as any defects are recorded in writing. The report must be signed at the time of acceptance (see Sample Acceptance Report for Lighting).

Sample
Acceptance Report
for Lighting

Check before expiration of the guarantee period

Check the lighting installation for defects three to four months before the guarantee period expires and report them to the contractor in writing.

Swarm intelligence ensures safety and good lighting

Underground car parks and multi-storey car parks are usually inhospitable places where many people feel uncomfortable. For this reason, the lighting is often operated as continuous lighting "at full blast".

In cases like these, the installation of an intelligent LED lighting system with so-called swarm intelligence is recommended. Each lighting fixture has a sensor (motion or presence sensor). The lighting fixtures are networked and share sensor information with the respective neighbouring lighting fixtures.

The light moves with the person

When a person enters the underground car park, two to four lighting fixtures in the immediate vicinity switch to full light (100 percent illuminance). The surrounding lighting fixtures detect the direction of movement and switch on an orientation light (approx. 10 percent of full light) in this area. This provides security and enables spatial orientation.

"Our tenants feel much safer and energy costs have dropped significantly."

Sereina Keller, Team Leader Property Management, HGW Heimstätten-Genossenschaft Winterthur

In this way, the light moves through the room with the person. In the vicinity of the person there is full light, and in the wider area a pleasant orientation light. In the remaining areas of the underground car park, the light remains greatly reduced.

Measurements in Winterthur and Zurich have shown that intelligent LED lighting with swarm intelligence reduces electricity consumption by more than 90 percent.[1] These types of systems are suitable not only for underground car parks and multi-storey car parks, but in principle for all extensive, irregularly used spaces such as stairwells, corridors, archives and warehouses.

Video
Swarm lighting in practice

[1] See the HGW Heimstätten-Genossenschaft Winterthur project (refurbishment of two underground car parks) and the Heuried residential settlement project in Zurich.

Well-lit workplaces with a high proportion of daylight

In the industrial halls of SIG allCap AG in Neuhausen, the old strip lights (two-lamp lighting fixtures) were replaced by efficient LED batten lighting fixtures. At the same time, the lighting system, which previously operated with full light (100 percent) all day, was equipped with a daylight sensor system.

Illuminance deficits eliminated

One of the reasons for switching to LED was the unsatisfactory lighting situation in the workplace area. Working at the high-precision machines that produce closures for cardboard packaging (e.g. for beverages) requires a great deal of light. Measurements showed that the old FL tubes only provided 300 lux instead of the required 500 lux. The new LED lighting provides significantly higher illuminance. Even though the new lighting fixtures are 50percent more efficient than the old FL tubes, electricity costs can "only" be reduced by 10 percent because the number of lighting fixtures was increased in favour of better illumination. In return, the requirements of the Labour Code regarding uniformity are now also complied with.

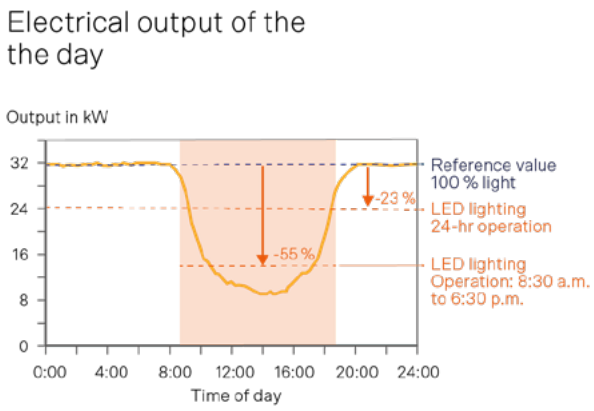
The daylight sensor system reduces the energy costs of the lighting by 10,000 Swiss francs per year.

Daylight sensor technology makes the difference

The two industrial halls have a shed roof ("sawtooth roof" with skylights) that provides the halls with light during the day. With the help of daylight sensors, the LED lighting fixtures automatically adjust the illuminance to the ambient light during three-shift operation (24 hours x 365 days). This reduces energy consumption by an additional 23percent. The annual energy costs for lighting can therefore be reduced by an impressive 10,000 Swiss francs.

Particularly effective during the day

The evaluation of the project shows that with daylight sensors in industrial halls with shed roofs in single-shift operation, it is even possible to achieve savings of up to 55 percent.



Functional and more convenient – with 90 percent less energy

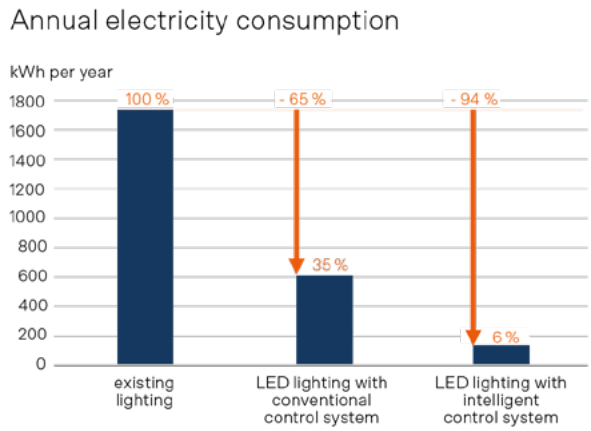
Like many other buildings in Switzerland, the common traffic areas of the "Rütihof, Zu-rich-Höngg" housing development of the ASIG housing cooperative were previously illuminated with compact fluorescent lamps. The lighting on the basement floors was controlled with a motion detector, and with a twilight switch on the floors with daylight. The 22 lighting fixtures installed had a combined connected load of 560 watts. As a result, the illuminance (without daylight) reached an average of around 30 lux.

Replacement with intelligent LED lighting fixtures

The lighting was replaced with intelligent, net-worked LED lighting fixtures with integrated daylight and presence sensors. The connected load of the lighting was reduced to 200 watts. At the same time, it was possible to increase the average illuminance to around 80 lux.

Clever control

The individual lighting fixtures can be adjusted with an app on a mobile phone. In addition, the lighting installation has swarm intelligence. The integrated presence sensors detect people and automatically switch on sufficient light. Thanks to the networking of the lighting fixtures and sensors via the Blue-tooth wireless standard, people are accompanied safely and with good light through the stairwells.



The right lighting solution for any situation

Our lighting fixtures are more than 20 years old
For old, heavily worn lighting systems with yellowed and brittle plastic parts, replacing the entire lighting system is the best solution. This way you can also benefit from an intelligent control system. The investments pay off quickly thanks to reduced energy, maintenance and servicing costs.

Our building will be completely renovated in the next two to five years
A retrofit solution with LED tubes can cover the time until the lighting is replaced. (see box on right).

Our lighting is new, but equipped with old technology
Look into converting the lighting fixtures so that the new lighting fixtures do not have to be disposed of. This way you save valuable resources.

We have old surface-mounted lighting fixtures in the stairwell of our block of flats
A conversion or retrofit solution is hardly worthwhile here. Take the opportunity to replace all the lighting in the stairwell with modern LED lighting fixtures with an intelligent control system (see pages 9 and 14).

How can I check whether the project is economically viable?
A good offer compares the characteristic values of the old with those of the new lighting. This will give you a breakdown of the economic viability of most funding programmes and the amount of funding available for your project.

Solution D
Replacement of the FL lamp with an LED tube

In rooms with low visual comfort requirements (e.g. archives, ancillary rooms in companies as well as cellars, laundry rooms and single garages in private environments), FL lamps can be replaced with LED tubes. These fit into the old sockets or bases (retrofit).

Important: The Labour Code sets quality requirements for lighting at the workplace. LED tubes often do not meet these criteria and are therefore not suitable as a replacement in these cases. At most, they can be used to cover a temporary situation.

When replacing the FL lamp with an LED tube, the following points must be observed:
- FL lighting fixtures with conventional ballasts (CBs) can be easily converted with an LED tube and the LED starter supplied (see fact sheet below).
- For lighting fixtures with electronic ballasts (EBs), EB compatibility lists are available from the lamp manufacturers. With the help of these lists, you or your electrical specialist can determine which LED tubes are suitable for the installed EB lighting fixtures.

Fact sheet
Replace old lighting fixtures with LED tubes

The seven most expensive mistakes in lighting replacement

1. Requirements not analysed
The analysis of the existing lighting fixtures and the future lighting requirements are the basis of successful lighting replacement.

2. Saving on the control system
With an intelligent control system, you can tap into an additional 40 percent savings potential in electricity costs. Modern control systems are also cost-effective.

3. Cheapest solution chosen
The solution with the lowest investment costs can become expensive over the years. Therefore, be sure to consider the total cost per year.

4. Operation without adjustment
Every lighting installation must be carefully adjusted to avoid consuming electricity unnecessarily.

5. Poor lighting quality
Good lighting quality at the workplace increases productivity and reduces the risk of accidents. The Labour Code also stipulates lighting quality requirements that you must comply with.

6. Funding applied for too late
If you are counting on funding: it must always be applied for before the order is placed, otherwise you will miss out on this valuable contribution to your project.

7. Unclear responsibilities
Give one company overall responsibility for the project. Clear responsibilities are needed between the electrician and the lighting fixture suppliers in order to avoid expensive interface problems.

Photo sources:
ASIG Wohngenossenschaft/Ralph Hut: Page 14
HS Technics AG: Page 3, 4, 5 top, 5 bottom, 7
Nevalux AG: Page 6 top, 11
SIG allCap AG: Page 13 top
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Zumtobel Licht AG: Page 6 bottom, 13 bottom
zweiweg gmbh: Page 11

Illustrations:
zweiweg gmbh, Page 2, 14

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Where can I obtain funding?

There are a variety of attractive funding programmes that direct subsidies towards replacing an existing lighting installation with efficient LED lighting. In recent years, the funding programmes have been steadily improved and the effort and complexity of applying for the funds have been significantly reduced.
Important: The subsidies must be applied for and approved before the order is placed. Subsequently – if the lighting has already been replaced – subsidies can no longer be applied for.

Information on the funding programmes
(Energiefranken)

07/2023