

ESY WORLD

NEWS FROM THE WORLD OF
AUTOMATION AND LIGHTING

REDUCING CO₂ EMISSIONS AUTOMATICALLY

SOLUTIONS OFFERED BY DEMAND-DRIVEN BUILDING AUTOMATION FOR INCREASED ENERGY EFFICIENCY

GLOWING LIKE FIREFLIES

HOW LIGHTING DESIGNER EMLYN ÉTIENNE GORONCZY IS TACKLING THE ENVIRONMENTAL ISSUE OF LIGHT POLLUTION

ENERGY-EFFICIENTLY SUPPLIED

HOW LSW NETZ GMBH BENEFITS FROM INTELLIGENT AUTOMATION AND LIGHTING SOLUTIONS

WELCOME

Dear readers,

Our world is currently facing enormous challenges. Perhaps the greatest of these is the climate-neutral and sustainable transformation of all areas of society and the economy: the energy transition.

This not only requires the development and refinement of technologies for energy generation, but the improvement of energy efficiency also makes an important contribution to this – a core task of demand-driven building automation. Discover how various presence and motion

detectors help to reduce CO₂ emissions, as well as which methods contribute towards reducing the growing environmental issue of light pollution: All this and more can be found in the latest issue of ESYWORLD!

Happy reading!

Mareks Peters


Chairman and CEO of ESYLUX

Cover image:
Fireflies at night are a fascinating phenomenon. However, increasing light pollution is making it more difficult for them to find a mate, thus threatening their existence. Fireflies in particular can serve as a model for lighting design that can help to reduce light pollution.
Read more about this on page 14.

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HIGHLIGHT
REDUCING CO₂ EMISSIONS
AUTOMATICALLY

Use energy only when it is really needed: Demand-driven automation using presence and motion detectors also contributes to the reduction of CO₂ emissions. Here's an overview with some examples.



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GLOWING LIKE FIREFLIES

It's not just climate change that's harming the environment and humans, but increasing light pollution as well. Lighting planner and architect Emlyn Étienne Goronczy discusses the most effective countermeasures.



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REFLECTIONS
ENERGY-EFFICIENTLY
SUPPLIED

From Melbourne in Australia to Wolfsburg in Lower Saxony, operators and users of our new references all around the world are benefitting from increased energy efficiency and a better quality of life as a result of intelligent automation and lighting solutions.



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SPECTRUM
INNOVATIONS

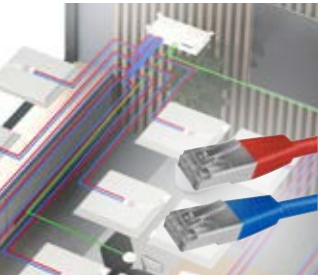
Upgraded lighting systems with ESYLUX Light Control, floating light from the SVENJA ceiling lights, black DALI-2 presence detectors: Our latest innovations demonstrate how easy it is to achieve energy efficiency.



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NEWSFLASH
ESYLUX NEWS

The plug-and-play lighting solution to make up for a shortage of trained personnel is presented in a particularly illustrative format: Check out the animations and short videos from the ELC Presenter for ESYLUX Light Control. Our customers also benefit from simplified navigation in the product area of the ESYLUX website.



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TOUCHPOINTS
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Meet us in person and find out more about our latest innovations. Check out our preview of the upcoming trade fairs and industry events where ESYLUX will be presenting its automation and lighting innovations.



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REDUCING CO₂ EMISSIONS

AUTOMATICALLY

DEMAND-DRIVEN BUILDING AUTOMATION SOLUTIONS FOR INCREASED ENERGY EFFICIENCY

Lighting, ventilation, standby consumption: Many devices in buildings increase energy costs and therefore contribute to environmentally harmful CO₂ emissions. Demand-driven control by means of intelligent sensors can improve this situation in many cases – and the options for doing so have increased over time. Here's an overview with some examples.

Climate change entails a number of consequences – and the full impact that these will have on our future continues to be unknown. So what is its main driver? The answer is, of course, CO₂ emissions. Caused by the consumption of fossil fuels such as oil, coal and gas, the topic is preoccupying politics, the economy and society at this time like barely any other. In addition, the realisation is growing that reduced energy consumption will strengthen self-sufficiency with respect to resource-rich countries. And of course, it will ultimately save money.

Alongside switching to renewable forms of energy, more efficient use of energy is the order of the day. Increased energy efficiency leads to a reduction in the extraction and consumption of fossil fuels, which protects natural resources and slows down climate change. "Use energy only when it is really needed" is the watchword for demand-driven building automation using presence and motion detectors – and it's proving more valuable today than ever before.

SWITCHING PRESENCE AND MOTION DETECTORS

The idea behind this concept is easy to understand: People often forget to turn off lights and other devices whenever they leave a room. It's a particular concern in non-residential buildings like offices, educational institutions or healthcare facilities. This is because users generally do not have to bear the costs for running these facilities themselves. However, even in private-sphere applications such as outdoor lighting, there's no need for artificial light to be shining continuously at full power.

The most basic way of preventing this is to use motion detectors and switching presence detectors (Fig. 1). These devices only switch on nearby lighting in insufficient ambient light conditions whenever people are in their vicinity, and ►

PRESENCE- AND DAYLIGHT-DEPENDENT LIGHT SWITCHING

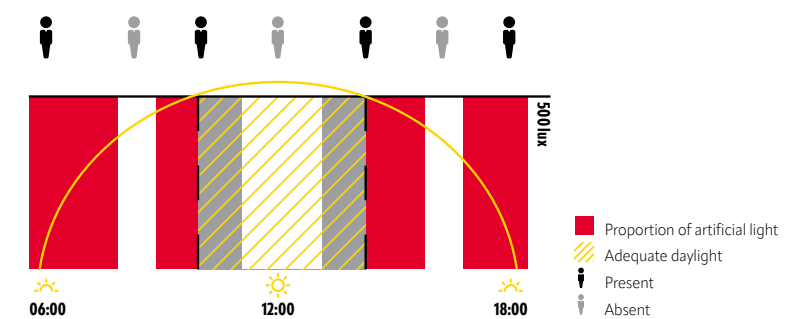


Fig. 1: Even the use of a simple presence detector that switches depending on presence and daylight significantly improves the energy balance.

switch it off again as soon as the area is no longer occupied, or once daylight provides sufficient brightness again. It sounds simple – and it is. In addition, the automatic limitation of lighting to times when people are actually present reliably makes use of the high service life of LEDs.

DEMAND-DRIVEN CONSTANT LIGHT CONTROL

Presence detectors with presence- and daylight-dependent constant light control (Fig. 2) go a whole step further: They not only switch the artificial lighting on and off, but also dim it. And they do so according to a predefined brightness setpoint and the daylight that is already present. The lights only shine as brightly as needed. The energy is supplied only to the extent that it is really required – completely in line with the slogan already mentioned above.

Constant light control makes sense in areas exposed to normal or above-average levels of daylight in particular. Today, it is primarily presence detectors for DALI and DALI-2 that perform this control function, because the industry standard clearly surpasses the possibilities of analogue technologies. In addition, grouping for this is easy with the aid of software (and directly via

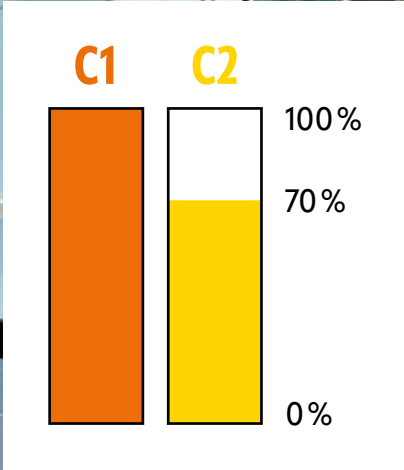


Fig. 3: With a simple offset, the daylight utilisation of the constant light control can be further optimised even with only one presence detector in the room. ▲

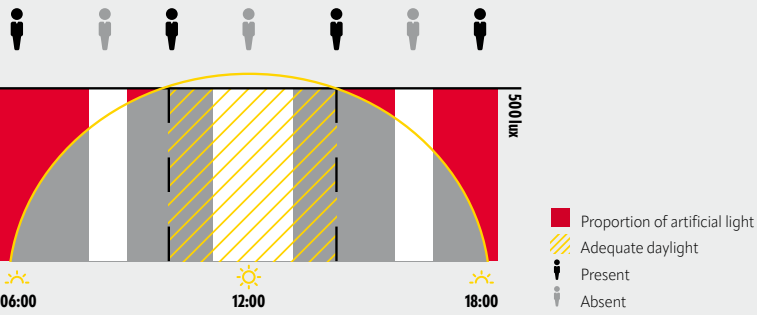
smartphone with ESYLUX), as is subsequent reconfiguration. The end user also benefits from extremely flexible lighting management.

CONSTANT LIGHT CONTROL WITH OFFSET

A presence detector achieves constant light control using a light sensor. For this reason, at least one detector is always required to control the light individually in a specific room zone. In rooms exposed to daylight on one side, for example, the need for artificial light between the window side and interior area is quite different. This would call for individual control in both zones. However, it is often neither economical nor efficient to use another detector in this scenario.

The concept of offsets was developed for this purpose, which improves the energy efficiency of constant light control even when only one detector is used (Fig. 3). Offset control was previously described in detail in the last issue of ESYWORLD. To summarise the concept again here: With offset, lights far away from the window and lights near the window are each assigned to a different ►

PRESENCE- AND DAYLIGHT-DEPENDENT
CONSTANT LIGHT CONTROL



◀ Fig. 2: The presence- and daylight-dependent constant light control of a presence detector is the best form of daylight utilisation. At VDU workstations, it adapts to a brightness setpoint of 500 lux.



group. The detector with the corresponding offset function dims the luminaires near the window more and earlier than the lights far away from the windows, reducing energy consumption even further.

HUMAN CENTRIC LIGHTING USED IN AN ENERGY-EFFICIENT WAY

All the previous examples refer to traditional lighting with a fixed light colour. However, over the past few years, a more modern type has become increasingly popular in the form of Human Centric Lighting: Dynamic, daylight-like colour and brightness gradients that, as scientifically proven, improve vitality, well-being and health, among other benefits. Human Centric Lighting, also called biologically effective light, requires a higher illuminance for this purpose, and is also recommended by the current EN-12464 standard for healthy lighting in workplaces.

In order to make the advantages of Human Centric Lighting energy-efficient, ESYLUX has developed SymbiLogic technology (Fig. 4). SymbiLogic transfers the principle of constant light control to the biologically effective light by means of adaptive HCL light control: It takes the daylight that shines in as a

Fig. 4: SymbiLogic technology from ESYLUX transfers the concept of constant light control to Human Centric Lighting, thus reducing energy consumption even with its dynamic light sequences. ▲

point of reference and adapts to a dynamically changing brightness setpoint. Ordinarily, the artificial light does not have to shine at full strength. In addition, the lighting is of course switched on or off according to the presence or absence of people in the area.

MULTIDISCIPLINARY CONTROL WITH A MULTI-SENSOR SYSTEM

SymbiLogic demonstrates how a better quality of life can be achieved in an energy-efficient way. This kind of "combination" can be found in another application that admittedly has nothing to do with lighting – nevertheless, it serves as a good example of how multidisciplinary demand-driven building automation works. We're referring, of course, to the ATMO-series presence detectors. At their highest configuration level, they control not only the lighting in a KNX system, but also the air conditioning or ventilation system with the help of actuators.

This is possible because of their additional sensors for temperature, humidity and air quality (Fig. 5). Regular air exchange is especially important in well-sealed buildings, but also in rooms where many people are present at the same time. Since this is often forgotten about in non-residential buildings, ATMO presence detectors take care of the task automatically. But even in this regard, ►

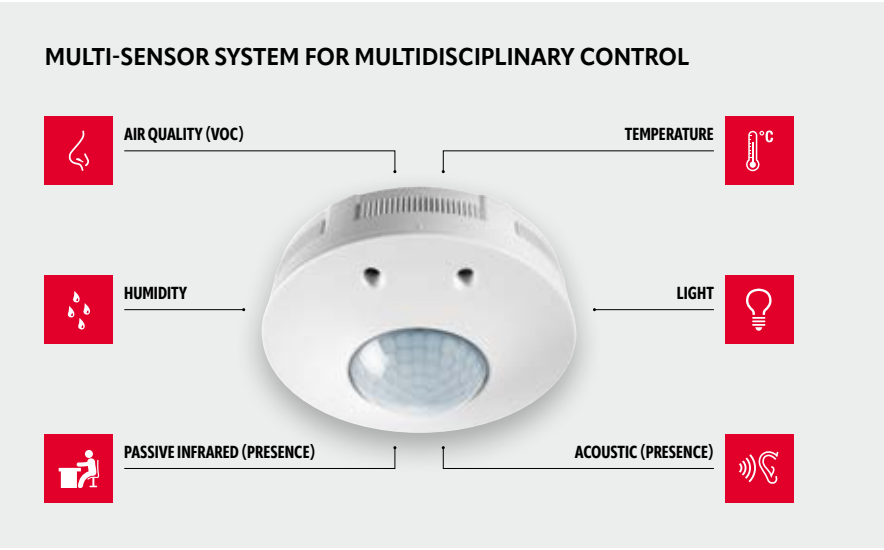


Fig. 5: A prime example of multidisciplinary energy efficiency: the multi-sensor ATMO presence detector for KNX at its highest configuration level. Among other things, it has an air quality sensor for energy-efficient improvement of the indoor climate. ►

they only let the air conditioning or ventilation system work as intensively as the current room atmosphere actually requires. In this way, they ensure energy-efficient operation and also do away with the need for multiple individual solutions due to their multi-sensor technology.

PRESENCE-DEPENDENT SWITCHING OF 230 V DEVICES

However, KNX systems cannot be installed everywhere. Simpler solutions are therefore also needed for the demand-dependent control of 230 V devices such as ventilation systems. One such energy-efficient alternative is purely presence-dependent switching by means of presence detectors with a separate switching output, also called HVAC output. The ON/OFF presence detectors of this kind that are manufactured by ESYLUX can be recognised by an additional "plus" in the name.

The presence-dependent switching of devices is not limited to the typical case of ventilation; monitors, printers, electrically height-adjustable desks and many other devices with standby consumption can also be easily and reliably deactivated in this way (Fig. 6). In DALI presence detectors and in lighting systems with ESYLUX Light Control, this is done fully or semi-automatically via special DALI actuators.

TIME-DEPENDENT CONTROL

We've already mentioned a number of different automation triggers here, including presence, light, temperature, humidity and air quality. But there's one important trigger we still haven't covered: time. After all, this too can help to further improve energy efficiency – in cases where different operating modes

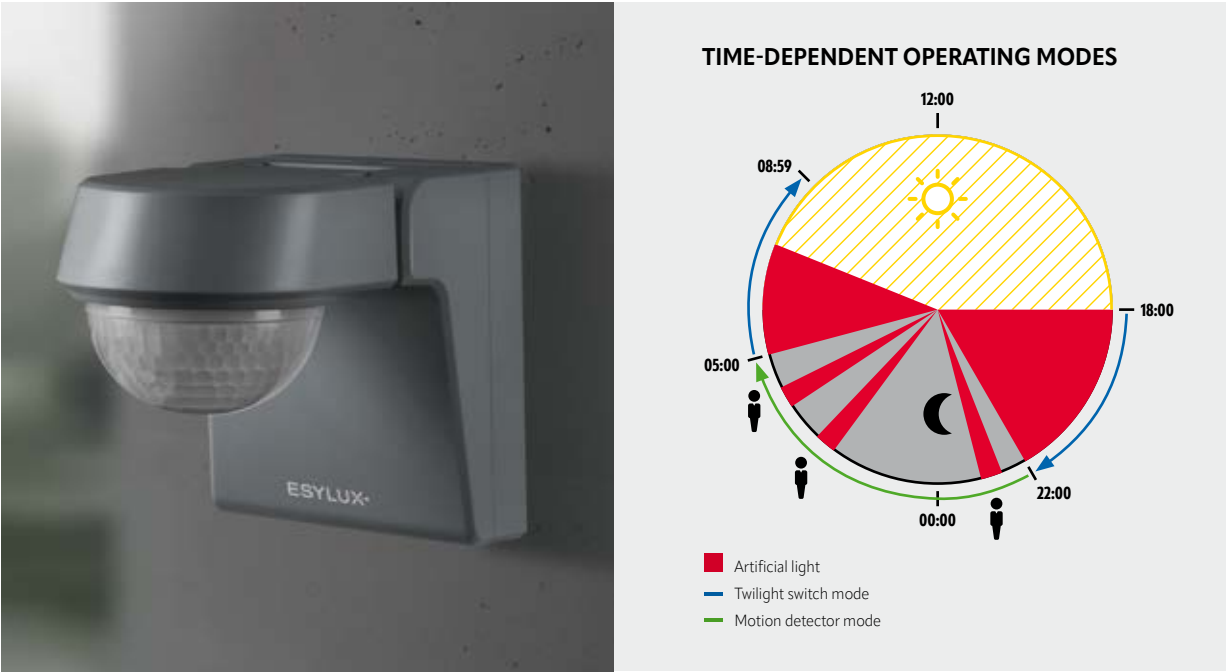


Fig. 7: Time-dependent operating modes can reduce both energy consumption and light pollution. In the example, the twilight switch mode provides prestigious lighting in the early morning and evening hours. At night, on the other hand, the light only comes on when there is movement – and then goes off again automatically. ▲

can be activated depending on the time, for example. Outdoors, it can also be an effective way to reduce light pollution at night – and thus counteract another environmental problem.

The DEFENSOR outdoor motion detectors demonstrate how this is possible. In addition to the standard operating mode, two time windows with a different operating mode can be set (Fig. 7). For example, it would be possible to select twilight switch mode for the two time windows in order to provide prestigious lighting for a commercial building in the early evening and morning hours. In contrast, the fully automatic motion detector mode could be used as standard and thus also at night between 10 pm and 5 am. This saves energy – and at the same time avoids insects being continually attracted by artificial lighting.

SEMI-AUTOMATIC PUSH BUTTON OPERATION

All the examples show the different ways in which demand-driven automation using presence and motion detectors can improve building energy efficiency. The advantage is always the same: In principle, the user does not have to worry about anything. One question remains, though: If people forget to switch off the light so often, why should detectors with a push button input exist at all? Well, on the one hand, users sometimes want to decide for themselves when to switch on the light, or override automation by scene, as is the case with lighting systems with ESYLUX Light Control or DALI-2 systems.

However, a push button can also be advantageous in terms of energy efficiency. Presence and motion detectors generally only switch off lighting and other devices after a lag time has elapsed. Even if this duration is only set to 1 minute, for example, if the user actually remembers to switch the light off, the push button still makes it quicker to accomplish this. And even if they do forget to switch it off... at least you know that's covered, too. ■

PRESENCE-DEPENDENT SWITCHING OF 230 V DEVICES



◀ Fig. 6: Many people only think of presence detectors as lighting control. However, many other devices can in fact be switched depending on presence and thus save energy.

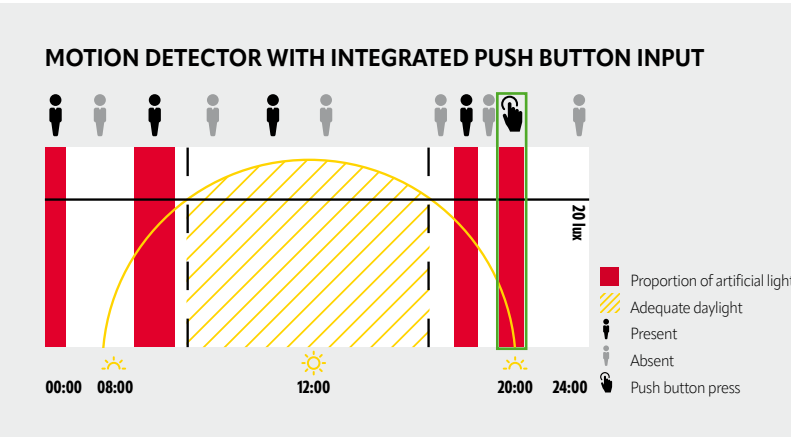


Fig. 8: Presence and motion detectors with push button input enable simple override. If the user forgets to switch the light off, the detector does it automatically. And if the user switches it off themselves, that's even better! ►

GLOWING LIKE FIREFLIES

LIGHTING DESIGNER AND ARCHITECT EMLYN ÉTIENNE GORONCZY ON LIGHT POLLUTION – AND WAYS TO REDUCE IT

Climate change, plastic waste in the sea, contaminated groundwater: Wherever there are people, environmental problems usually aren't far away. For a number of years now, another phenomenon has been observed – namely, a worldwide increase in light pollution. Emlyn Étienne Goronczy has created a fundamental method of analysis and solution with a study of the situation specifically in metropolises – and continues to find innovative approaches to curbing the problem in his own lighting projects.

Mr Goronczy, in some of your work as a lighting designer, one could get the impression that you would rather avoid light. Isn't light a beautiful thing, though?

Yes, light is beautiful, but only in the right amount. With a beautiful classical building, for example, there's no use in illuminating everything evenly with a spotlight; otherwise, you might not be able to see the details any more. That's why you always have to work with different levels of brightness or dimming. When illuminating buildings, we set the scene for the architectural details that we want to emphasise – for example, by making them slightly brighter than other areas. The architectural gesture is particularly important to us – that is, what the architect wants to express. We try to support that with light.

As one of a small number of lighting design offices, we also have the option to produce luminance images with spatial resolution. With these images, we can record the contrast conditions on the building in detail and thus clearly determine the brightness values required from a perceptual-psychological point of view. In doing so, we only use as much light as is really necessary, which is then more beneficial for the architecture and also for the environment. Less is simply more.



Emlyn Étienne Goronczy holds a Master of Science degree in architecture with a focus on lighting design, and works as a lighting designer for the international planning office Studio DL. In addition to indoor lighting and urban lighting design for outdoor spaces, the prevention of light pollution is a focal point in his work. His projects are mainly in Germany and the Netherlands.

Fascinating and beautiful when seen from above, but a growing environmental problem down on Earth: illumination on Earth at night, photographed by NASA. ▲

By environment, you mean the issue of light pollution. Many people are not yet familiar with this term. What does it mean?

This is a very complex term. Most people understand it to mean the exorbitant amount of light that causes urban sky glow, the light you see over a city at night. But you actually have to divide light pollution into other categories.

For example, light trespassing, which occurs when certain light sources are incorrectly positioned or oriented. You might want to illuminate a roof edge, for instance – but instead of lighting up just the roof edge, you end up directing a portion of light into the sky as well. Glare is another such category. It refers to the physical or psychological dazzling of people by light. Then there are cluttering effects. Clutter occurs when multiple light sources are simply planned incorrectly and placed too close together, thus emitting an unnecessarily excessive amount of light. In the end, it all results in excessive illumination, which leads to a whole host of problems for many organisms.

One of the consequences of light pollution is that the Milky Way can only be seen in remote places in the world, and the starry sky in general is becoming increasingly faint. This could perhaps still be tolerable.

As a human being, you could maybe learn to live with it. But migratory birds, for example, navigate using the stars. And if the view of the stars is no longer available, they can no longer do this. More importantly, the biological clock is thoroughly confused by light pollution, especially by an increased unnatural amount of cold white light with a high blue content. This applies to humans as well as to birds, insects and other organisms that coordinate their activity using this light-dark phase. ►





Because artificial light makes everything brighter for longer, the active phase of insects is prolonged. This means that they consume more energy than they take in, which can be fatal. Light pollution also has direct negative effects on humans. Not only can light be unpleasantly dazzling, especially when there are strong contrasts at night, but too much artificial light at night can also lead to suppression of melatonin production, which studies have linked to diabetes, cancer and heart attacks.

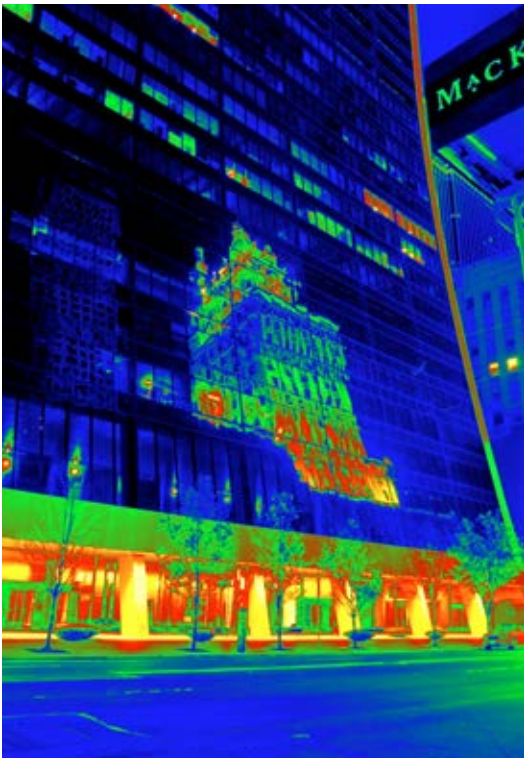
Birds estimate which season they are in based on the lengths of the day and night and then determine when to breed. Early breeding can have negative effects on the offspring, especially if this takes place in the cold winter months. Light rays from illuminated or backlit façades also attract birds, which repeatedly leads to mass collisions. All of these are just examples. Ultimately, a whole bunch of negative ecological changes are produced.

There are also differences in the perception and effect of light between humans, birds and insects. For example, luminaires that appear less bright to the human eye can appear extremely bright to insects.

Yes, insects generally also perceive the blue content in the light spectrum much more strongly. That is why they are more attracted to light sources with a higher blue content in the spectrum and why warm white luminaires are better in principle. But there's a paradox to this: The colour temperature does not necessarily correlate with the blue content of a luminaire. To the human eye, for example, a luminaire with 4000 Kelvin looks cooler than one with 3000, but this says nothing about the blue content. Thus, as a planner, you actually have to take a spectrometer to hand before planning any luminaire, in order to find a reasonable ecological solution. The situation can be even more complex with regard to flora, as there are tree species that are sensitive to the red content in the spectrum.

The city that never sleeps: This moniker for New York City was once made popular by Frank Sinatra. Unfortunately, in terms of light pollution, it has a rather bad reputation. ▲

Backlit window facades, company logos and bright shop windows: A luminance image in New York's Midtown reveals different aspects of light pollution in detail. ▼



We can therefore only ever find solutions with a compromise; there is no scenario in which you will satisfy every condition 100 %. The world is too complex for that, with too many protagonists. For each project, we look at the surroundings, communicate with biologists and – as unfair as it may sound – we then draw up a list of priorities. Conflicts of interest still remain. The other solution would be to turn off the lighting completely, but that is not possible in many cases. Especially not with street lighting, when we are talking about safety-related illuminance levels.

How can the extent of global light pollution be measured?

Using satellite images. They give a good overview of the total amount of radiation being emitted towards the sky. What the satellite images don't show you, however, are the solutions. For example, you might question why one street is so much brighter than another.

For your study on light pollution in metropolises, you therefore also travelled directly to cities such as New York, Toronto and Warsaw. What causes of light pollution were you able to identify?

The causes are very location-specific, and each city has its own problems. It is often not possible to identify them with the naked eye. Quite often, certain streets look relatively dark. But if you then look at the luminance image and relate it to the street cross-section, you suddenly notice that Boston, for example, has more light emissions than New York.

New York is full of skyscrapers: These are all office buildings and some of them have people working late into the night. After all, it is "the city that never sleeps". These tall buildings with backlit windows in New York cause a lot of the total light to be directed towards the atmosphere. In Boston, on the other hand, the buildings are lower and the building density is not as high. Boston therefore has a lot of shop windows, entrances and, in the side streets, cluttering effects.

So the bright shop windows in New York are not so bad because of the high buildings and the many absorbing surfaces?

If we are only talking about the urban sky glow – the light that goes into the atmosphere – then yes. The light from the shop windows in New York is carried into the urban space and then you have quite a lot of surfaces that have the potential to absorb the light. However, the light that is generated down there also attracts insects, so it still remains a problem area. ►

To compare the metropolises, you developed your own evaluation standard called "weighted urban total luminance". The results showed that Warsaw produced by far the most light pollution of the cities studied, even more than Boston and New York. That is surprising. What's the reason for this?

The excessive cluttering and the enormous light emissions generated as a result. Warsaw is also heavily populated with illuminated billboards. Naturally, these are meant to attract attention and are therefore particularly bright.

As far as measures against light pollution are concerned, we can already deduce a lot from what you have said so far.

The best solution is dimming – I cannot emphasise that enough. It is the biggest factor, as reducing the overall amount of light has a bigger impact than reducing just the blue content. For the ecosystem, of course, it remains best to have no artificial light at all, but you have to find a compromise between relevant lighting and ecological aspects.

A very strong measure would also be to plan and implement projects sensibly, i.e. by looking at the needs of the planning area beforehand and planning accordingly. This includes the aforementioned spectral analysis of the light sources. It is then very important that the light points are, in the best case, not visible at all and positioned relatively far down, so that insects are not triggered by a distant light point in the first place. It is very much about making light invisible and only having light where you need it. Time also plays a factor – so again, dimming is important.

No part of a beautiful building façade needs to be illuminated if there are no people around. This is not only highly questionable in terms of light pollution, but also in terms of electricity consumption. If you have a plan that is very good for the ecosystem, then it is usually also a plan that is very economical because it will consume less electricity. Thus, it's important to consider dimming here as well – or, if possible, to switch lights off completely.

You write in your study that, in your view, urban spaces do not have to have the same appearance at night as during the day. Lighting design makes it possible to reduce light pollution and still create urban identities. You take fireflies as a model for this.

Yes, I think it's a stunning example, and that's how I personally see light planning. A firefly looks different during the day than at night. During the day, it looks like any ordinary insect, and some people might even be disgusted by the appearance of the firefly. But in the evening, the insect seems so magical, even though it's really only a point of light that people are fascinated by. You only see a fraction of the insect, and that's a philosophy I like to adopt in my lighting designs.



The Polish capital Warsaw is the unfortunate front runner in the study, mainly due to clutter effects and advertising. ▲

Low and sparsely placed light points, low illuminance: The High Line, a disused elevated railway line in New York, shows how night-time lighting can be reduced right down to the essentials. ▼



When you look at a church, it appears imposing and beautiful during the daytime. But why do you have to present it in the evening exactly as you saw it during the day? It is much more charming to highlight special architectural elements, so that you can experience the churches in a new light. Then, on an emotional level, perhaps the same thing happens as with the fireflies: You get slight goose bumps because the whole thing looks a bit more sublime.

During your study, you were also able to find positive examples – such as the High Line in New York, the track bed of a former elevated railway, which has since been converted into a local recreational facility.

I don't know if the lighting designer had the ecological aspect in mind, but what was simply very positive were the low light points that were used there. The whole thing is very cleverly planned. The idea was to present the city of New York itself, the urban environment, as a stage. This means that when you are on the High Line, you don't want to be dazzled. The light points there are therefore so low that even people in wheelchairs cannot see them. Of course, this also has a good ecological aspect, because the light points are also less visible to insects from a distance.

What's more, the illuminance is so low that you can see into the urban space from the High Line. There is virtually no lighting in the paths; it is much more geared towards special features. If there is a bench, for example, it is illuminated for guidance, again with low light points. This also shows that these high illuminance levels – this homogeneity, which one would perhaps use for a path in the park – is not at all necessary. You simply need illuminated landmarks to be able to move around safely. ►



A new method has been developed for insect tracking in Heiningen. Underneath the head of the street light, there is a camera (right) and a white screen (left) for this purpose. The AI-supported software automatically detects an insect as soon as it appears in front of the screen. ▲

Reducing light pollution is also a focus of your own projects as a lighting designer. Most recently, in a team with several partners, you came in 2nd place in the nationwide "Reallabore Innovation Award", awarded by the German Federal Ministry for Economic Affairs and Climate Action. How and where did you succeed?

The project is in Heiningen, a small town in Baden-Württemberg with about five and a half thousand inhabitants. What was actually a relatively small project has turned into a study that is now supported by the Baden-Württemberg Ministry of Transport. Originally, it was about planning the street lighting for the through street in Heiningen with new LED luminaires. Then came the idea of making it even more efficient and ecologically compatible with dimming. This turned into a one-year long-term study, which had never been done before.

There were different ideas on how to control this dimming: Whether to simply dim the lights over time, i.e. take dimming value XY from 10 pm and dim them up again from 4 am, or whether to dim down when there is less traffic. In other words, dimming that adapts to the flow of traffic, in the hope that this will be even more efficient and ecological. We decided to test both options. There are therefore measuring points without dimming, with time-dependent dimming and traffic-dynamic dimming. The study then consists of a technical and a biological part.

Maybe explain the technical part first.

The technical part first dealt with how we can actually measure the flow of traffic. We tested three approaches for this. One was tracking via Bluetooth, which records how many Bluetooth devices are on the move. This assumes that the driver of the car has a smartphone and that the car may also send Bluetooth signals itself. The second method was an infrared camera that picks up the heat from the cars. The third method was the evaluation of TomTom navigation data. All the methods were relatively good, but Bluetooth tracking emerged as the winner in the end.

Then it was about finding out what was more efficient: the street section with time-dependent dimming, or the one with traffic-dependent dimming. The results showed that traffic-dynamic dimming was marginally more economical.

Tracking took place at three ecologically comparable locations on the through street in Heiningen. Only the lighting control differs:

- A = Without dimming
- B = Dimmed to 50 % between 10 pm and 4 am
- C = Dimmed to 50 % between 10 pm and 4 am

At measuring point A, 700 insects were recorded in the sample over the course of one month; at nearby measuring point B, 200 insects were recorded, and at the more distant measuring point C, just 84 insects were recorded. ▼



It must be noted, however, that this study concerned a relatively short through street. If the project were to be scaled up, traffic-dynamic dimming could make even more sense.

The biological part was then about insects.

That's right, insect tracking. We wanted to know how many or how few insects were attracted by the dimming or non-dimming. We did this at three points: in the city centre without dimming, and at two other points with static, time-dependent dimming by 50 % between 10 pm and 4 am. To do this, the locations of course had to be comparable, both in terms of lighting technology and biodiversity. We got in touch with a biologist who confirmed the biological comparability of the sites.

For insect tracking, we have developed a novel method with the camera manufacturer. In the usual procedure, a transparent plastic body is suspended underneath the head of a street lighting luminaire in which the insects become trapped and eventually die. It also distorts the illumination or the light distribution curve through its reflections and may therefore attract more insects than the luminaire alone would. This is an unjustifiable method, both in terms of lighting technology and ecology.

We use insect cameras from the Netherlands, which were originally developed to record biodiversity in a specific region. The measuring setup includes a screen made of sheet metal so that the camera has a background. The screen is mounted underneath the luminaire head. As soon as an insect flies by, it is automatically detected by AI software and categorised in the respective insect groups. If, for example, it ultimately turns out that an insect species worthy of special protection lives in the area and is attracted by the light, the spectrum could be adapted to its individual needs if necessary. With this setup, we've have taken a huge step forwards.

And what was the result of the insect tracking?

We collected more than 350,000 data sets over the course of a year and these are still being analysed, so the overall result is still pending. However, we did analyse a random sample, and this sample strongly confirms our hypothesis that less light also attracts fewer insects. This is also confirmed by other studies.

At the measuring point without dimming, we recorded a good 700 insects over a period of one month. At one of the other points with time-dependent dimming, 200 insects were recorded. However, this second point was still located close to the point without dimming and influenced accordingly by its illumination. The third point was situated a considerable distance away with time-dependent full dimming, and only 84 insects were recorded here. This results in a win-win situation: It saves electricity and preserves insect life at the same time.

It's a great project – and the mayor of Heiningen also views it as a pilot project for larger-scale projects.

What I really enjoy is working out the compromise solution – and a different solution is needed everywhere. No one project can just be copied onto another. All the detective work, the coordination work involved; it's exhausting, but motivating. ►



We are currently developing another interesting project in Amsterdam. There, we were given the task of illuminating all the windmills. These windmills are not always found in an urban context, but are often located in environments where there are many natural spaces. Some windmills are also in the Natura 2000 area, i.e. a nature reserve. This means that the illumination there should be designed with a major focus on preserving the ecosystem. Here too, our solution is accordingly to dim down the lighting design as much as possible.

How did you proceed?

For this project as well, we wanted to emphasise the architectural gesture. We asked ourselves: What is the most important thing about a windmill? For one thing, it's the area where the blades of the wind turbine come together, known as the shaft head, because this is often very beautifully decorated. And of course, the body is something of a defining feature as well.

There were already four to six points of light around the mills. Up to now, they've been used to illuminate the mill as a whole from all sides. We, on the other hand, have divided the light points into different segments in terms of control technology. Our intention is that when the mill head rotates around its own axis, only the luminaires in the direction of which the shaft head is currently turning should come on.

That certainly sounds efficient.

A compass is built into the upper, rotating part of the mill for this purpose. The compass indicates in which direction the mill is currently turned and passes the signal on to the individual luminaires. These are connected to each other wirelessly. And based on the compass data, only the luminaires that are supposed to light up are the ones that come on. If the shaft head is located between two luminaires, they each shine with 50 % light output. This means that light is only produced where it's needed. This is another mini-project into which a relatively large amount of brainpower and engineering has gone in order to produce as little light as possible. And it's also a new development that does not exist on the market.

◀ Windmills are among the oldest and most important of humanity's technical achievements and are among the most famous sights in the Netherlands. It is not only the blades that turn when the wind blows, but also the entire upper part of the mill, depending on the wind direction.
A = Shaft head
B = Blades

As for all other projects in general: DALI ballasts are standard in the luminaires that we use in our planning. We have stored a dimming scenario for every outdoor lighting project that we plan. There is no project where the lighting runs at 100 % all night. There is always a point in time when the light is dimmed and, depending on the building or object, usually a second point at which all the lighting goes out.

Light pollution also plays a role in indoor planning. Presence detectors, for example, switch off the light when there is no longer anybody in the room or dim it down to an orientation light. But there are other aspects to consider, as you outline in your study.

The building should always be planned from the inside out. This includes not only the lighting technology, but also the materials used in a new building, for example. In this regard as well, we have had interesting projects in the past where we were able to play around a lot with the materials and thus reduce light emissions. This is not just about low-reflectance materials – it's much more far-reaching and complex.

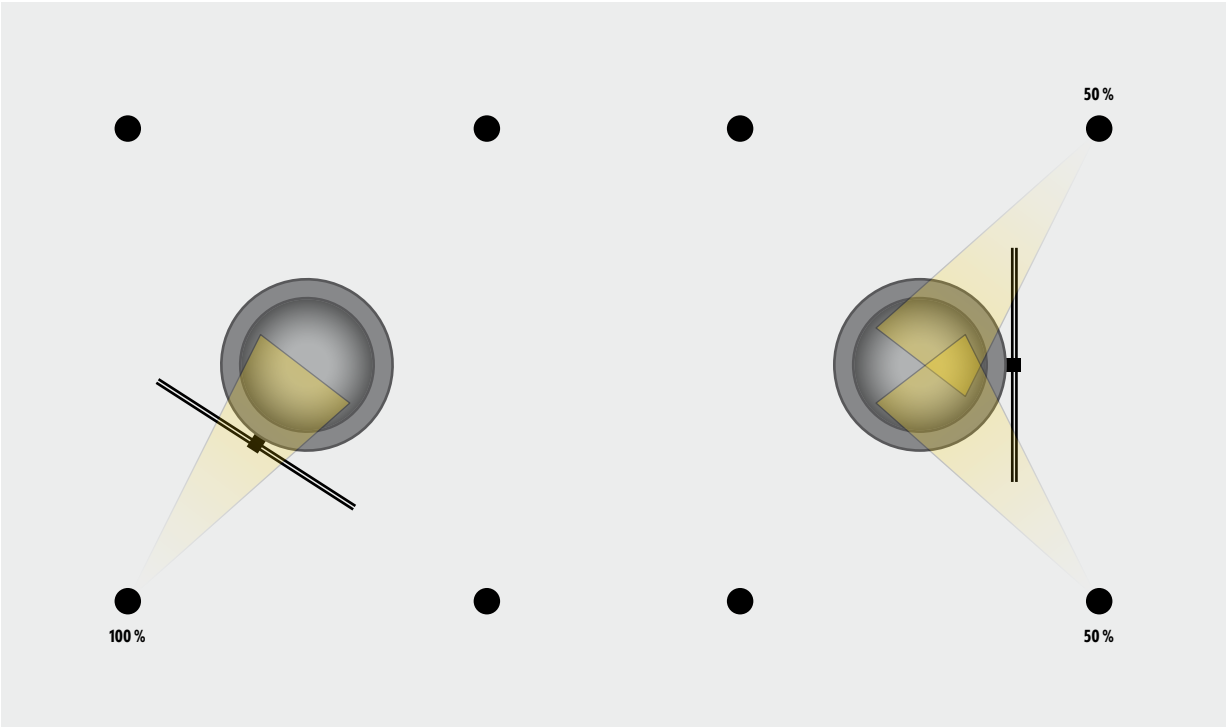
One project was a glass building. For the façade, we used glass that filters out the blue part of the light spectrum – that's truly interdisciplinary work there. I think a lot of people just don't realise how the light leaves the building and that it has a huge impact. Of course, glass that filters out the blue content is worth its weight in gold.

Are you proud of your work?

Yes, in retrospect. What bugs me a bit is that at the end, I often think that it could have been done better. But, in general, I am very proud of the projects, especially if there is a certain degree of innovation involved. And the environmental aspect is a great motivator.

Mr Goronczy, many thanks for sharing these interesting insights. ■

If the upper part of the mill turns according to the wind, only the lights in the direction of which the shaft head is pointing turn on. If it is located between two luminaires, both light up – but are dimmed accordingly. ▼



The study "Light Pollution in Metropolises" by Emlyn Étienne Goronczy has been published in German and English and is available in both printed and digital form.

Detailed information on the topic can also be found on numerous websites, for example at www.darksky.org

Emlyn Étienne Goronczy

Light Pollution in Metropolises

Analysis, Impacts and Solutions

Springer



The best light for nature is no artificial light at all – or at least a heavily dimmed one. ALVA bollard lights with integrated motion detectors automatically solve this requirement. At times when there is no movement, they dim down to a soft orientation light or switch the lighting off completely.

ENERGY-EFFICIENTLY SUPPLIED

HOW LSW NETZ GMBH BENEFITS FROM INTELLIGENT AUTOMATION AND LIGHTING SOLUTIONS

As part of the core refurbishment of its building at the technology site in Fallersleben, Wolfsburg-based energy supplier LSW has installed modern LED lighting and intelligent presence detectors from ESYLUX. An automatically controlled orientation light provides additional safety in the corridors. A lighting system with energy-efficient Human Centric Lighting is used in the workspaces.

With its network area of around 2115 square kilometres, as well as decades of experience and expertise in planning and managing electricity, gas, water and district heating networks, LSW not only supplies energy to the city of Wolfsburg in Lower Saxony, where the company is based, but also to numerous towns and municipalities in the surrounding areas. In consultation with the government, administration, property developers and the public, the company is continually developing new concepts for energy, heat and transport. ►

An energy specialist with decades of experience in the planning and management of electricity, gas, water and district heating networks: LSW at the Wolfsburg-Fallersleben technical site.

CORE REFURBISHMENT AT THE WOLFSBURG-FALLERSLEBEN TECHNICAL SITE

The Wolfsburg-Fallersleben technical site's two-part building – which houses 130 workspaces – had technology that was getting a little long in the tooth: outdated electrical installations, a multitude of different types of radiators and much of it now a kind of patchwork due to variable room uses. Those responsible therefore decided on a core refurbishment, in the course of which the three floors and the basement with a total of 630 square metres of floor space were modernised from the ground up – from the shading, air conditioning, ventilation and data technology to the renewed façade.

When it came to renewing the artificial lighting, the decision was made to permanently install LEDs throughout the building. In addition, intelligent presence detectors were to be used to control the lighting depending on requirements. Both measures increase the building's energy efficiency, and the sensor technology also provides automated comfort. LSW used ESYLUX solutions for both the lighting and the sensor-controlled automation.

ENERGY ONLY WHEN IT'S NEEDED

Today, entry-level BASIC-series presence detectors ensure motion- and daylight-dependent switching of OLIVIA-series moisture-proof lights in storage rooms and file cabinets. Plugin terminals on both sides of the luminaire housing made it easy to wire through. Another advantage of automation is automatic switching on and off only as required, as this makes optimum use of the long life expectancy of the built-in LEDs.



In LSW's individual and multi-person offices and meeting rooms, an intelligently controlled lighting system with ESYLUX Light Control ensures energy-efficient Human Centric Lighting. ▲

In the corridors and entrance areas, as is often the case, a more elegant design was required. ELSA Square-series downlights were therefore installed here. During installation, the drivers were easily connected to the luminaires via a plugin connection, and the low installation depth of the aluminium housing also simplified mounting. With their flicker-free light, the luminaires guarantee the best lighting and visibility conditions in traffic areas.

CORRIDORS WITH AUTOMATIC ORIENTATION LIGHT

To control the downlights, the energy supplier opted for a special version of the ESYLUX COMPACT series with DUO-DALI presence detectors. In the corridors, they provide presence- and daylight-dependent constant lighting control in DALI broadcast mode and would also be suitable for energy-efficient offset control of two lighting channels in rooms with only one window side. However, the actual reason for use at the current location was the orientation light function of the detectors. ►



◀ In the meeting and conference rooms of the two-part building, LSW employees regularly coordinate current projects. Here too, they benefit from the Human Centric Lighting of the installed lighting system.



LSW has illustrated the corridors thematically according to the respective departments. ELSA Square-series downlights provide ambient lighting, controlled as required by DUO-DALI presence detectors. ►

The orientation light produces heavily dimmed illumination, the intensity of which can be varied from 10 to 50 % light output. With appropriate configuration via the ESY-App, the detectors activate the orientation light as soon as the lag time following the last detected movement has elapsed. This maintains a pleasant background brightness in the corridors, which prevents, for example, someone from stepping out of a lit room into a corridor that is pitch black at first. This has also proved to be a convenient and, above all, safe solution for LSW's night-time on-call service.

LIGHTING SYSTEM FOR PLUG-AND-PLAY INSTALLATION

LSW's office spaces include individual, multi-person offices and meeting rooms with typical suspended acoustic ceilings. ESYLUX lighting systems with ESYLUX Light Control ELC control technology contribute to wellbeing here. The lighting systems combine recessed LED ceiling lights, control units and an intelligent presence and light sensor system. All components were simply connected during installation using plug-and-play and were ready to use immediately with the factory settings without having to be programmed.



In the sanitary areas of the two-part building, the synergy of COMPACT presence detectors and ELSA downlights ensures lighting that's optimal while remaining energy-efficient. ▲



Due to daylight-dependent light control, the artificial light often does not have to shine at full power. In the corridors, the presence detectors dim it down to an orientation light if nobody is present. ▲



Employees in the company benefit from energy-efficient Human Centric Lighting implemented with the SymbiLogic technology from ESYLUX. For one thing, SymbiLogic creates brightness and colour gradients similar to daylight. These improve vitality, motivation and the ability to concentrate at work. For another, HCL stabilises the day-night rhythm by suppressing the hormone melatonin during the day, thus promoting restful sleep.

HUMAN CENTRIC LIGHTING FOR INCREASED VITALITY, CONCENTRATION AND IMPROVED HEALTH

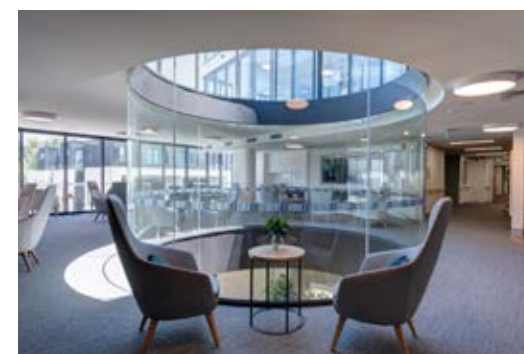
The SymbiLogic, in conjunction with the sensor technology, also ensures energy-efficient implementation of this modern form of lighting: The presence detector activates the artificial light only when someone is present and reduces energy consumption even with the dynamic brightness gradients. Using adaptive HCL light control, it dims the artificial light only as high as required by the dynamic setpoint and the daylight coming in through the windows. As such, the artificial light doesn't have to be on at full power during the day.

The employees are completely satisfied with their new office environment and the light is very pleasant. In addition, the light colour and brightness in the office spaces can be adjusted as desired at any time using a light switch. Otherwise, due to the automation, nobody needs to worry about it. This is also an advantage due to flexible working hours between 6 am and 6 pm and the high work-related mobility of the employees. After all, they can never know for sure whether they will actually be the last ones to leave the building. The presence detector is therefore always the last to switch off the light. ■

◀ Due to the high work-related mobility of LSW employees, they never know for sure whether they will actually be the last ones to leave the building. The presence detector therefore switches the lighting off in any event.

AUTOMATED COMFORT DURING THE TWILIGHT YEARS

INTELLIGENT LIGHTING CONTROL AT THE WHITEWATER NURSING HOME IN MELBOURNE, AUSTRALIA



Whitewater is located in the beautiful suburb of Mordialloc in the famous Melbourne Sandbelt. A 20-metre heated pool and a cafe also contribute to the wellbeing of the residents. ▲

To be leaders in innovative and integrated healthcare: That is the mission of TLC Aged Care, the largest family-run provider of residential aged care in the Australian state of Victoria. With this goal in mind, the Whitewater nursing home was established in Melbourne, Australia's first multi-generational healthcare centre. It offers the widest range of aged care facilities and services in the region. Alongside the nursing home, there is an early learning centre, medical centre and community centre.

FROM THE SWITCHING ENTRY DETECTOR TO CONSTANT LIGHT CONTROL

To be able to control the lighting in the Whitewater building in an energy-efficient way, TLC Aged Care used intelligent presence detectors from ESYLUX. The full automation in all areas accordingly ensures convenience. Elegant presence detectors from the FLAT-series control lighting in the bathrooms of the 150 residential units, for example, while presence detectors from the entry-level BASIC or COMPACT series are used in the underground car park, as well as in the management and administration rooms.

Medical consulting rooms in Australia need a bright 800 lux (in Europe, this minimum is even higher, at 1000 lux). In this regard, DUO-DALI presence detectors from the COMPACT series provide presence- and daylight-dependent constant light control and thus make energy-efficient use of the daylight entering through the large window areas. They also control the lighting in the childcare facility and switch an additional lighting group in the centre of the room using a DALI actuator from ESYLUX. In the projection room, where residents can attend cinema evenings and other entertainments, the lighting is dimmed down to a soft orientation light when there is nobody present. ■



ESYLUX presence detectors provide automated comfort and improved energy efficiency, in the same way as in Whitewater's medical centre. ▲

ENERGY-EFFICIENT HUMAN CENTRIC LIGHTING VIA PLUG-AND-PLAY

ESYLUX LIGHT CONTROL NOW WITH SMARTDRIVER-2 AND QUADRO-SETS-2

With the SMARTDRIVER-2, ESYLUX has developed the control unit for intelligent lighting systems further using ESYLUX Light Control (ELC). Variants with SymbiLogic technology have outputs for additional lighting that can now be used to control DALI DT8 operating devices. Streamlined housing and several detail improvements simplify plug-and-play installation.

Lighting systems featuring ESYLUX Light Control (ELC) and consisting of control units, presence detectors and ceiling lights can be grouped, scaled up and networked using plug-and-play: At a time when there is an increasing lack of trained personnel, ELC systems offer a time saving of up to 60 %. With the SMARTDRIVER-2, ESYLUX has now made further improvements to the control unit of the systems.

OUTPUTS FOR ADDITIONAL LIGHTING CAN CONTROL DALI DT8 DRIVERS

Depending on the variant in use, ELC lighting systems can be used to implement presence- and daylight-dependent constant light control, or energy-efficient Human Centric Lighting with SymbiLogic technology from ESYLUX. Systems featuring SymbiLogic have outputs for additional lighting that can now be used to control DALI DT8 operating devices. This capability allows additional DALI lights with Tunable White to be integrated into the Human Centric Lighting system to provide automated changes in brightness that imitate daylight. This feature also enables the lights to be controlled in parallel with the main lighting system.

CONNECTION METHOD ENABLES SEAMLESS SCALING AND NETWORKING

Several technical aspects of the systems were adjusted to make them even easier to install. The result is that, alongside plug-and-play, there are now

ELC QUADRO-SETS-2

The pre-configured, ready-to-install versions of the ELC lighting systems contain the control unit, sensors, luminaires and cabling for rooms up to approx. 20 m² and are now also available with SMARTDRIVER-2 and the improved CELINE-2-series recessed ceiling lights. ▼



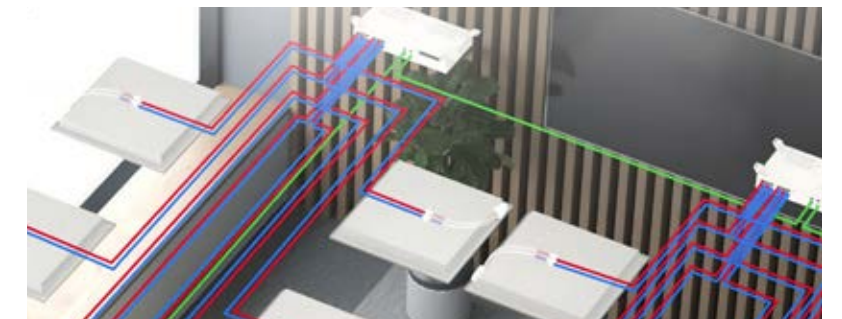
SMARTDRIVER-2 ELC CONTROL UNIT

The DALI outputs for additional lighting with Tunable White variants are now compatible with DT8. Among other things, the lower overall height of just 85 mm and flexible mounting feet for multi-sided mounting ensure even easier installation. ▲

Take a look at the structure and advantages of ESYLUX Light Control in the animated ELC Presenter on the ESYLUX homepage (see also page 44). ►

additional connection options for scaling and networking groups: Scaling can be accomplished using RJ10, while RJ11 is available for networking. This ensures a confusion-free and thus error-free installation. The SMARTDRIVER-2 is also able to detect whether there is a sufficient power supply to the system, and automatically switches the CO bus supply on or off as required.

All variants now feature a standardised and significantly slimmer housing with improved heat dissipation and an optimised cord grip for the 230 V connection. The new mounting feet can be fitted in one of multiple directions and feature slotted holes for additional flexibility. ■



FUNCTIONAL DESIGN, FLOATING LIGHT

THE NEW SVENJA CEILING LIGHTS FOR DALI-2 OR ON/OFF

The SVENJA series from ESYLUX consists of flat, round ceiling lights for DALI-2 or ON/OFF that are ideal for communal areas in schools, retirement homes, hospitals and offices. The indirect light they provide makes surface-mounted luminaires appear to be floating just below the ceiling. Alternatively, pole and wire pendulum sets are available that enable the luminaires to be suspended from the ceiling. The luminaires feature a modular design that makes installation much easier.

Communal areas such as foyers, auditoriums, break areas, common rooms and canteens require aesthetically pleasing lighting solutions and, above all, excellent energy efficiency. To this end, ESYLUX has developed the LED ceiling lights from the SVENJA series.

ROUND, FLAT LED CEILING LIGHTS IN THREE DIFFERENT SIZES

The round, flat luminaires with powder-coated aluminium housing in diameters of 450, 600 or 900 mm have a high indirect light content of 35 %, creating a great atmosphere in the room and making surface-mounted luminaires appear to be floating just below the ceiling. Alternatively, optional pole and wire pendulum sets enable the luminaires to be suspended from the ceiling. The extensive backlight arrangement of the LEDs and specially designed lenses ensure homogenous, dazzle-free illumination and a long LED service life. The lights have a luminous efficacy of up to 122 lm/W.

FOR ON/OFF – OR DALI-2 WITH CONSTANT LIGHT CONTROL

In addition to variants designed for straightforward switching operation, the series also offers luminaires with DALI-2-certified operating devices. The DALI-2 industry standard offers cross-manufacturer interoperability that allows the luminaires to be integrated into a central building management system or combined with decentralised, multi-room APC presence detectors from ESYLUX for DALI-2. The presence- and daylight-dependent constant light control that is offered reduces the energy consumption of the luminaires to a minimum.

The modular, two-part design consisting of the driver box and luminaire body makes it significantly easier to mount the luminaires to the surface of the ceiling: After securing and wiring the driver box, the luminaire body is simply connected to the box via an electrical plugin connection and snap lock. Two fall protection wires are used to secure the luminaire body. Unlike most luminaires, the luminaire body does not have to be opened. This means that the variants with diameters of 450 mm and 600 mm can be installed by just one person. ■

Indirect light makes the SVENJA surface-mounted luminaires appear to float under the ceiling. ▲

As an alternative to ceiling mounting, SVENJA luminaires can be suspended with pole and wire pendulum sets.



SVENJA POLE PENDULUM SET 1000



SVENJA WIRE PENDULUM SET 2000

AN INTUITIVE WAY TO OVERRIDE INTELLIGENT AUTOMATION

DALI-2-CERTIFIED MULTIFUNCTION PUSH BUTTONS WITH INDIVIDUAL LABELLING



APC presence detectors from ESYLUX for DALI-2 control up to 16 lighting groups in a decentralised fashion and in multiple rooms. The automation can be easily overridden via the physical push button inputs of the APC and BMS presence detectors – or now also via DALI-2 push buttons from ESYLUX. ▼

ESYLUX has developed DALI-2-certified multifunction push buttons for intuitive overriding of its decentralised, multi-room DALI-2 solutions. The push buttons can be labelled to indicate their individual assigned function. Due to cross-manufacturer interoperability, the push buttons can also be used in centrally controlled third-party building management systems.

If you want more than just ON/OFF functionality for lighting in offices, educational institutions and medical facilities, then there is no better option than the DALI-2. Finally, DALI-2 presence detectors also reduce energy consumption by means of presence- and daylight-dependent constant light control. ESYLUX has developed the DALI-2-certified multifunction push button to offer a flexible way to override intelligent automation as necessary, and it is compatible with 55 mm frames from major manufacturers.

UP TO EIGHT SEPARATE PUSH BUTTONS WITH INDIVIDUAL LABELLING

A total of four push button variants feature up to eight individual push buttons, which, as is typical for DALI-2, can be assigned with up to three functions by configuring the system control unit. These functions include switching on and off, dimming up and down, and activating individual scenes. A template is available on the ESYLUX website for labelling the main function of push buttons, allowing installers and users to easily create labels with symbols for standard functions or scenes.

EASILY RESUME ENERGY-EFFICIENT AUTOMATION

An important aspect from an energy efficiency perspective is that manual dimming or overriding with DALI-2 scenes usually stops energy-saving light control. However, with DALI-2 solutions from ESYLUX, resuming automation can be assigned to an individual function for a push button. For manual dimming, APC presence detectors offer an additional special function option: Manual dimming overrides but does not stop automation – instead, it adjusts the level of brightness of the light control and automation continues to run based on this new value. ■



ENERGY EFFICIENCY WITH MODERN COLOUR CONTRASTS

BLACK PRESENCE DETECTORS FOR DALI-2, KNX AND ON/OFF

Be it switching variants or versions with presence- and daylight-dependent constant light control, presence and motion detectors with a black cover have now been added to the ESYLUX COMPACT and FLAT series. The control technologies range from the DALI-2 and KNX right through to a simple ON/OFF system.

Current colour trends in interior design call for high-contrast tones, while spaces decorated using dark tones such as anthracite and black are increasingly popular in modern buildings. In order to adapt its intelligent, energy-saving sensor technology to this style, ESYLUX has expanded its portfolio in the field of automation accordingly.

12 NEW SENSOR TECHNOLOGY VARIANTS AVAILABLE IN A NEW COLOUR

A total of 12 new presence and motion detector variants are now available ex works with a black cover. These variants include APC and BMS presence detectors from the COMPACT series for industry standard DALI-2. The APC presence detectors provide multi-room, decentralised control of up to 16 lighting groups using an integrated control unit, bus voltage supply and four inputs for 230 V push buttons. The BMS presence detectors provide essential information from all areas via integrated presence and light sensor technology as well as two push button inputs for 230 V push buttons.

DALI-2 AND KNX PRESENCE DETECTORS WITH BLACK COVER

The new range also includes switching presence and motion detectors from the COMPACT series with total detection ranges of 8 or 24 metres in diameter as well as KNX presence detectors with presence-dependent and daylight-dependent constant light control. The KNX presence detectors also have a two-channel light control system with offset, which includes a HVAC output and two push button inputs. The switching presence and motion detectors from the elegant FLAT series round off the new designs. These detectors are available in LARGE variants for installing in e.g. large cavity wall boxes or in-wall boxes. ■



ENERGY-SAVING SENSOR TECHNOLOGY IS NOW EVEN EASIER TO USE

CEILING-MOUNTED PRESENCE AND MOTION DETECTORS FOR DALI-2, KNX AND ON/OFF



New presence and motion detector variants specially designed for recessed ceiling mounting are another addition to the ESYLUX portfolio. The units are well-known and field-proven devices from the BASIC, COMPACT and FLAT series; the new variants now also include installation brackets with spring clips. This simplifies installation and, because everything is covered by a single item number, it also simplifies the ordering process.

It is more important than ever to save energy, which is why offices, educational institutions and healthcare facilities should upgrade in good time to modern LED lighting and to a sensor-based, demand-dependent lighting control system. New presence and motion detector variants from ESYLUX are designed to make this even easier.

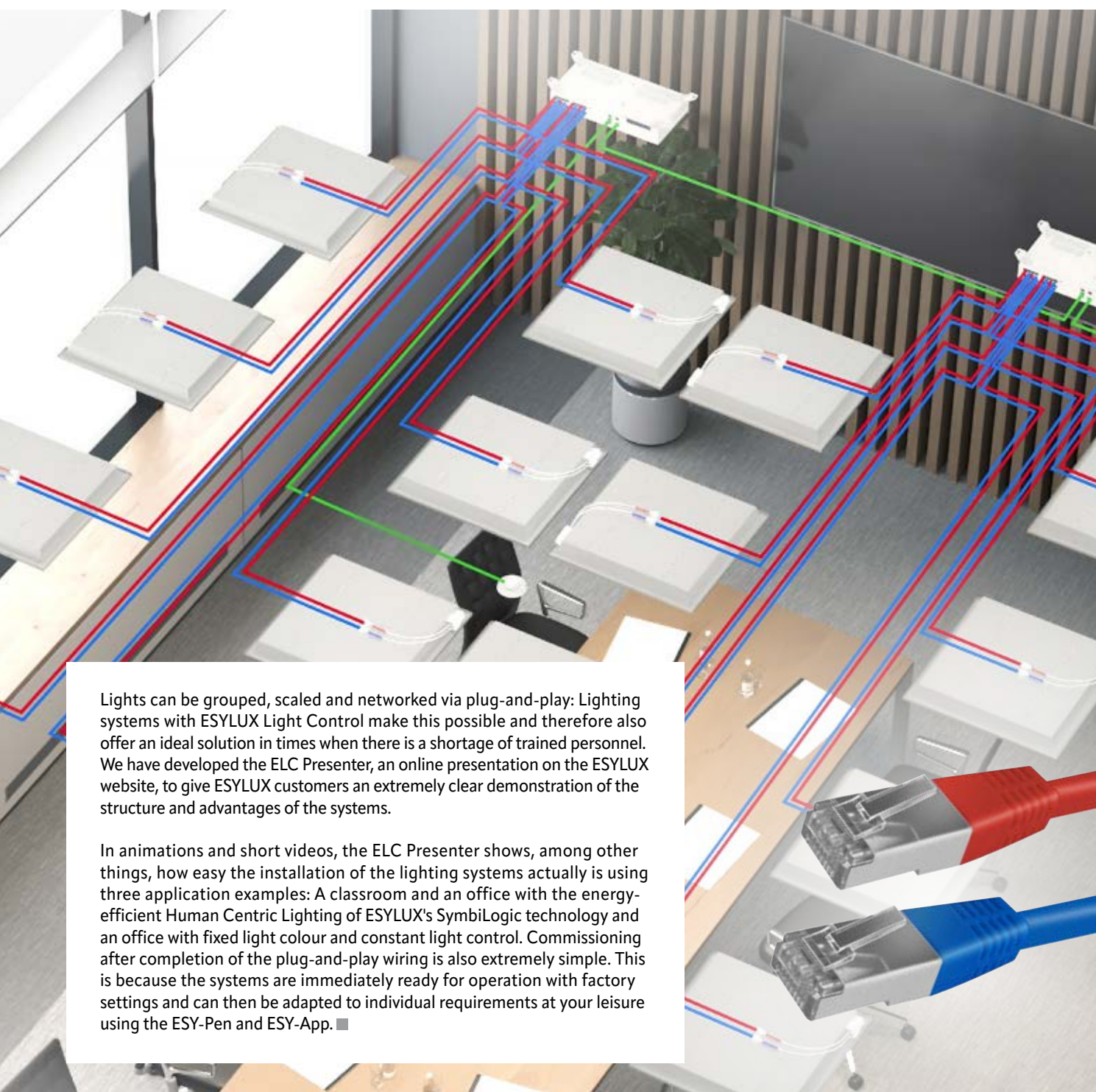
TWENTY-ONE DETECTORS FOR ON/OFF, KNX, DALI AND DALI-2

There are 21 detectors in total, all of which are well-known and field-proven devices whose previous variants were only intended for flush mounting and could only be installed using other methods by purchasing the appropriate accessories. To simplify both the ordering process by using only one part number and to simplify the installation itself, ESYLUX has developed new variants of these detectors. These new variants feature an installation bracket with spring clips as standard and are therefore pre-prepared for ceiling mounting; a dust-protected box is also included.

The new detectors are available in the entry-level BASIC series, the versatile COMPACT series and the flush-profile FLAT series and offer versions for different control technologies. These range from a simple ON/OFF switch to presence- and daylight-dependent constant lighting regulation with KNX, DALI or DALI-2. The DUO-DALI presence detectors from the COMPACT series offering offset regulation of two light channels and an optional orientation light are now also available in a ceiling-mounted version. ■

NEWSFLASH

ESYLUX LIGHT CONTROL ANIMATED: THE ELC PRESENTER



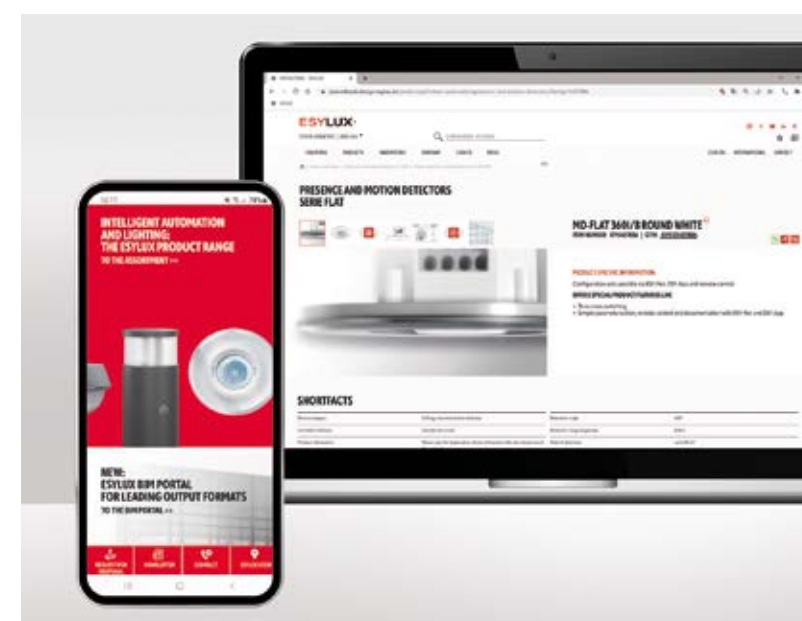
Lights can be grouped, scaled and networked via plug-and-play: Lighting systems with ESYLUX Light Control make this possible and therefore also offer an ideal solution in times when there is a shortage of trained personnel. We have developed the ELC Presenter, an online presentation on the ESYLUX website, to give ESYLUX customers an extremely clear demonstration of the structure and advantages of the systems.

In animations and short videos, the ELC Presenter shows, among other things, how easy the installation of the lighting systems actually is using three application examples: A classroom and an office with the energy-efficient Human Centric Lighting of ESYLUX's SymbiLogic technology and an office with fixed light colour and constant light control. Commissioning after completion of the plug-and-play wiring is also extremely simple. This is because the systems are immediately ready for operation with factory settings and can then be adapted to individual requirements at your leisure using the ESY-Pen and ESY-App. ■

NAVIGATE MORE INTUITIVELY: ESYLUX WEBSITE REBRUSH

Straightforward navigation, clear visuals across all devices and short loading times are all key requirements for a successful online presence. In order to further improve our digital offering, we have significantly modernised the design of the ESYLUX website.

The focus was primarily on optimising navigation in the product area. This new system means that, for example, all information about each product is displayed on the top level, without the need to click into further submenus. Scrolling down the page opens a small fixed menu. This menu provides the user with more information and allows them to quickly and easily jump between the various sections. A new thumbnail section also provides quick access to videos and images of the product. Try it for yourself! ■



SIMPLE CONFIGURATION: WITH DEFENSOR REMOTE CONTROL



With the introduction of the outdoor motion detectors and twilight switches in the DEFENSOR series, we have made building safety a priority. The DEFENSOR REMOTE CONTROL now supplements the already existing configuration options and provides the option to adapt all basic settings to the requirements on site.

The switch-off delay time, level of brightness and the automatic reading in of the current light value can all be changed according to individual requirements. The remote control can also be used, for example, to adjust the detector sensitivity, activate the impulse mode and set up continuous lighting for 4 or 12 hours for manual light switching without a push button. ■

TOUCHPOINTS

INTELLIGENT AUTOMATION AND LIGHTING SOLUTIONS AT LIGHT + BUILDING 2024. **ESY!**

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Light pollution interview: Studio DL,
E. É. Goronczy

Wolfsburg reference: Henning Angerer
Melbourne reference: TLC Aged Care

PERFORMANCE FOR SIMPLICITY

ESYLUX develops, produces and distributes intelligent automation and lighting solutions for a better quality of life and energy efficiency in office buildings, educational institutions and healthcare facilities. The focus is always on the wishes and needs of the individual.

To satisfy these requirements, we use our experience in electronics and automation to develop products such as LED-based systems for energy-efficient Human Centric Lighting. Our portfolio ranges from the complete automation and illumination of individual rooms through to networking and integration into building-wide systems. In view of the often complex requirements we encounter in the process, we place particular value on the simple application of our product solutions.

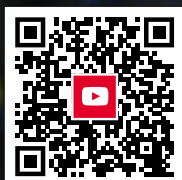
Our customers and partners are wholesalers, installation companies, electrical and lighting planners and architects who trust more than 50 years of market experience and the personal specialist advice our experts provide. We meet the highest quality standards in our research, development and production at our German location in Ahrensburg. Our sales organisation is global: ESYLUX operates in collaboration with experienced trading partners and is represented by numerous distribution companies in Europe, Asia and Oceania.



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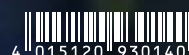


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