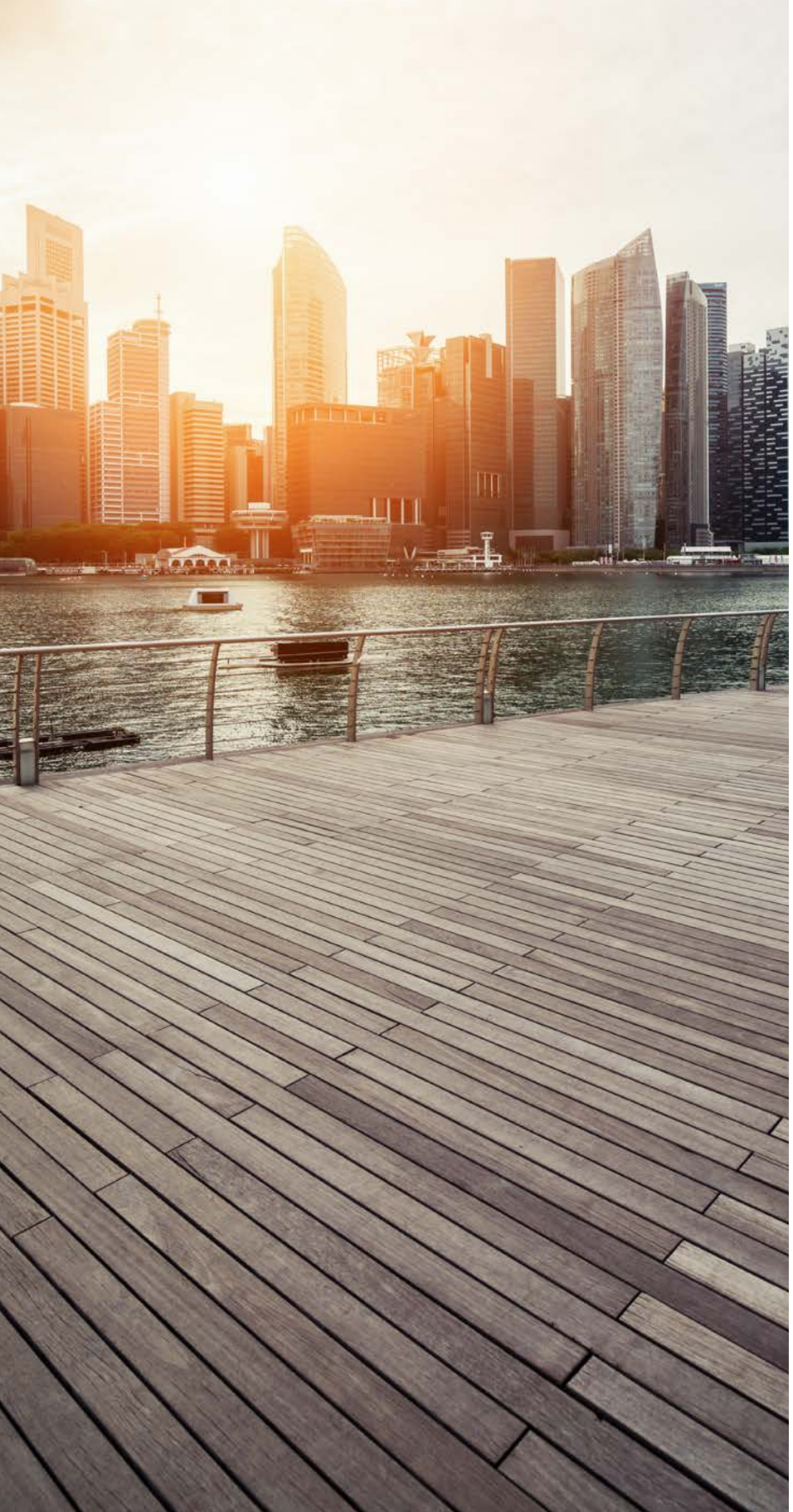
STEINEL solutions
for building digitisation.

Building Intelligence.

Basics, inspiration and examples on modern building sensor technology in various segments.

steinel



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The inventors' company

For 60 years now, we have been inventing and developing STEINEL technology products that are far ahead of their time and altogether capable of changing entire markets. This tradition is just as much alive today as it has ever been. Innovative inventions in tune with people's needs. For us, STEINEL is a model for the future with a long history. We call it: the inventors' company.

Martin Frechen
Managing Director

Building Intelligence

Modern buildings should be efficient, reliable, safe and secure - that's for sure. Yet it's more about us, as individuals. Spending an average of 90% of our lives in buildings today, we need to do much more to help ourselves than we ever used to. In short: Building Intelligence.

Thomas Möller
Head of Innovation / Product Management & Strategic Marketing

Applications

The world is changing. So are our sensors. Building Intelligence for better places to live in.

With sensors, we have revolutionised the world of lighting. Now our sensors are conquering new worlds. They are making buildings intelligent and even leaving them to make their own decisions. Whether resource-saving energy consumption, rational use of space or targeted deployment of staff – our sensors are at the centre of new Building Intelligence solutions and the key to barely imaginable capabilities in tomorrow's buildings.

Hospitality

Every hotel is different. But at the bottom line, it's always about one thing: satisfied guests who feel at home and want to come back. With our Hospitality solutions, we show that comfort and efficiency go together extremely well. Even at sea.

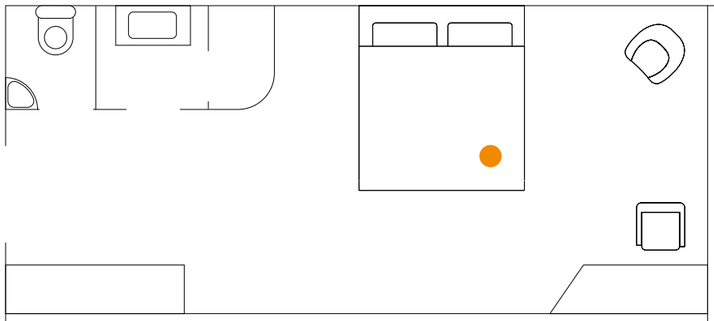
Andre Milos
Product Manager Controls & Building Intelligence Solutions

Park Inn by Radisson in Wismar. The hotel industry is setting course for the future.

At over 1.4 billion guest arrivals on the international stage, the volume of worldwide tourism reached a new record in 2018. What is the answer to meeting the growing expectations of guests and the challenges of the digital age? And how can running costs be reduced intelligently and service staff deployed more efficiently?

A hotel, a sensor and a complete success.

Shipbuilder MV Werften has been receiving its guests at its new hotel complex at the old "Alter Holzhafen" timber dock in Wismar since August 2019. Operated by Radisson, the hotel sets store by cutting-edge sensor technology which simplifies hotel-specific processes, improves service and comfort and saves energy. The ingenious twist: the hotel rooms are designed in exactly the same way as ship's cabins. In future, the plan is to use the sensors on cruise ships too.



Soon providing a higher level of comfort and efficiency in over 2,000 cruise ship cabins too: True Presence®.

98

All 98 hotel rooms are designed in exactly the same way as cabins on cruise ships – and fitted out with True Presence®.

MV Werften employs over 2,800 members of staff at its three operating bases - Wismar, Rostock and Stralsund. 75 years have seen the company build a total of around 2500 new ships.

Saving energy without guests noticing.

The solution concept, which covers all hotel rooms and includes hardware, software as well as service activities, is based on True Presence® from STEINEL.

100 %

Leaving no element of doubt, **the first true presence detector** detects whether or not guests are in their room.

2 °C

Room temperature is automatically changed by 2 degrees as soon as guests leave their room.

12 %

Saving energy by reducing heating and cooling costs without saving on guests' comfort.

True Presence®

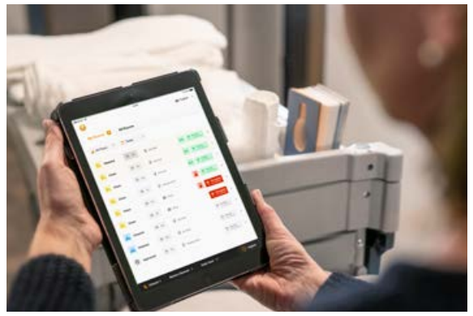
True Presence® technology reliably detects the presence of a person on the basis of the micro-movements caused by breathing – no matter whether that person is standing, sitting or even lying under the bed covers.

True Presence® helps us to significantly improve our service management. Of course, our hotel guests also benefit from this.

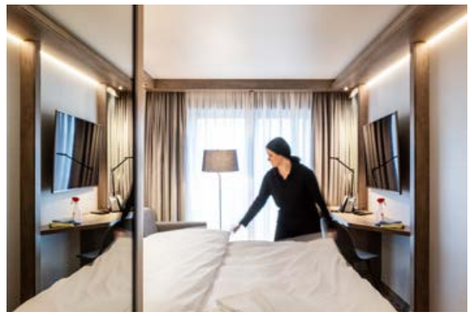
Alexander Pruess
Hotel Manager Park Inn by Radisson, Wismar

Good service goes unseen. But never unnoticed.

Sensor-assisted hotel automation not only means lower costs but also provides added value for guests. A quick look at the housekeeping app is all it takes, and cleaning staff instantly know at any time whether a room is not being used and can be cleaned. No need to knock on the door any more. No getting on guests' nerves.



Hotel guest in a room or not?
The app tells housekeeping whether the room is empty and can be cleaned.



Invisible staff
Service personnel can be managed in a targeted way, and guests feel more comfortable.

Quickly in the picture
Integrated into the PMS system, reception too always knows exactly which rooms have already been cleaned and can be given to new guests.

We save energy while also making our guests feel more comfortable. The true partnership with STEINEL and unmatched True Presence® have left us in no doubt whatsoever. The all-embracing solution concept is a boon for hotel operators, staff and, not least, for guests too.

Rato Juko
Project Manager IT & Electricity, MV Werften Wismar GmbH

Our sensor solutions make the difference. In all parts of the hotel.

Good to know when guests feel equally as comfortable in a hotel as they do at home. Solutions from STEINEL bring comfort and energy efficiency to every part of the hotel.

Bathroom

The **HF 180 presence switch** reliably switches on the light in the bathroom because it also detects movements behind a shower cubicle partition.

Corridors

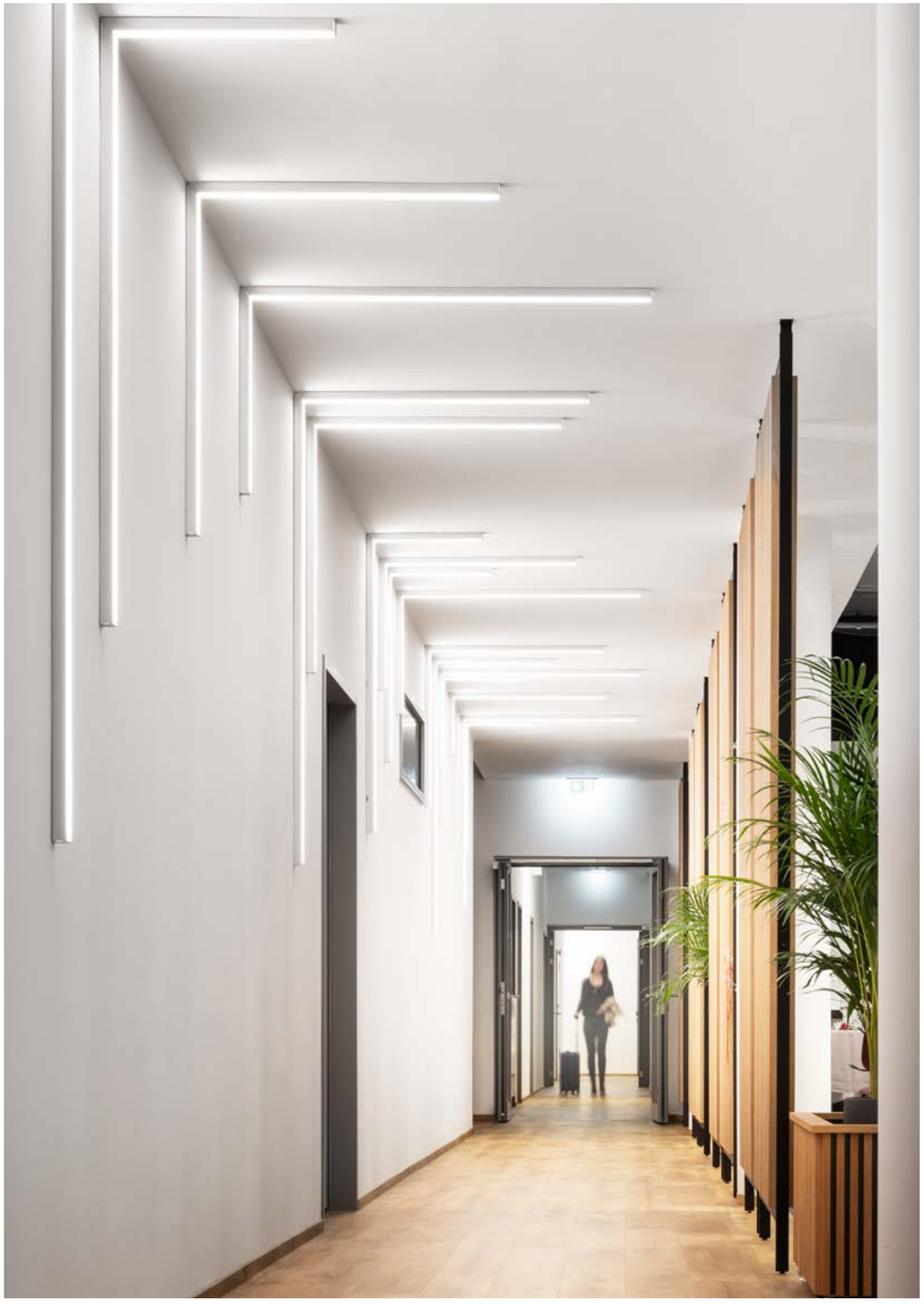
The dedicated **Hallway corridor sensor** identifies movements on long hotel landings. It is conveniently and easily controlled via Bluetooth by app.

Conference rooms

The **HPD3 optical sensor** counts persons present in service rooms. This makes it possible to target the way in which staff are deployed.

WC / washrooms

Hardly visible and particularly shallow, the **IR Quattro MICRO IR presence detector** with all-round vision also reliably detects any movements in areas exposed to moisture and humidity.



Find out more at steinel.de/hospitality

Office & Workspaces

Even though it sounds funny: working flexibility in particular needs clarity of structure. With our intelligent, data-based solutions for Office & Workspaces, we create the framework that is needed. So that New Work is working without a hitch in businesses both large and small.

Sabrina Schleicher
Junior Product Manager Sensor & Sensor Lights

12.30 noon – 3.45 p.m. Important appointment at Campana & Schott

Particularly in large cities, office space is scarce and expensive. Meanwhile, the working world is rapidly changing. "Nine to five" was yesterday. New Work needs flexible working hours and flexible places to work. This clears the way for home offices and digital workplaces. How can companies use floor space intelligently, in tune with their needs and in a way that saves resources – while also boosting the attractiveness and convenience of working in an office?

96 FlexDesk workstations for 200 staff? No problem. Campana & Schott has been using the Smart Workspace solution with huge success since 2019.

New Work is coming. We've already arrived.

In times of New Work, an attractive, forward-looking work environment based on intelligent technologies is becoming increasingly important. And Campana & Schott in Frankfurt know that too. The Smart Workspace solution, which also features a FlexDesk component in addition to managing meeting rooms, has been in use there since 2019.

As international management and technology consultants with over 400 employees, Campana & Schott assists leading companies in the transformation process on their way into the digital future. The list of customers reads like a Who's Who of German business. Including 28 of the 30 major German companies trading on the Frankfurt Stock Exchange.

200

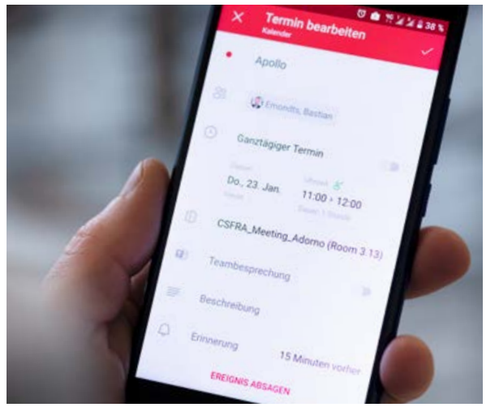
Staff at the Frankfurt operating base.

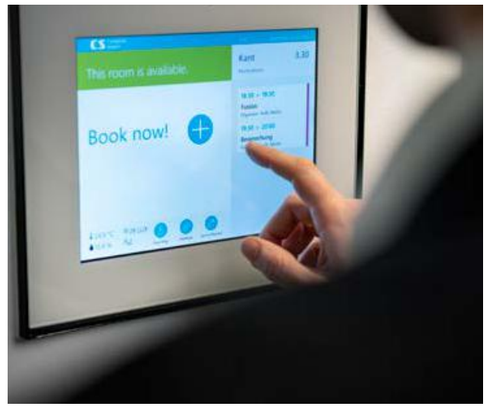
96

FlexDesk workstations spread over three storeys.

11

Meeting rooms can be managed conveniently and easily.





The Chat Bot and Digital Signage assistance systems help staff to look for vacant rooms, saving valuable working time.

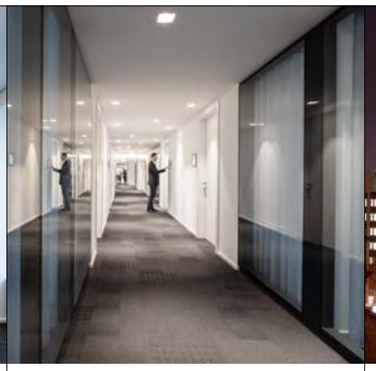
The HPD2 shows us data from the past that lets us make decisions for the future.

Bastian Emondts
Manager Campana & Schott GmbH

Data-based optimisation: this is the key to using office space more intelligently.

Commercial rentals are exploding. In Germany, the average cost of a workstation is € 7,000 a year. So, it pay dividends to make optimum use of existing spaces and match them to needs. On the basis of digital data and facts, which HPD2 provides as part of the Smart Workspace solution, companies can continuously analyse and optimise the way in which their space is used. And, in this way, harness huge potential savings.

Evaluation at room level
Which rooms are used by how many people and how often? The Smart Workspace solution collates key figures in a web-based application.

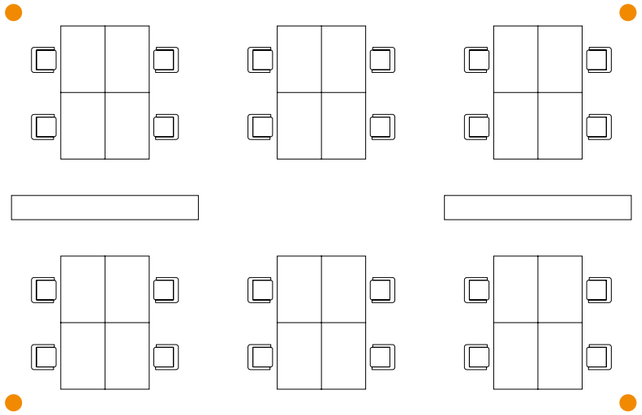


Evaluation at storey level
Looking at the key figures from individual floors can also shed light on potential for optimisation and hence for making savings.

Comparing locations
Which location is floor space best used at and are why? Key figures from buildings provide insight and help to make decisions.

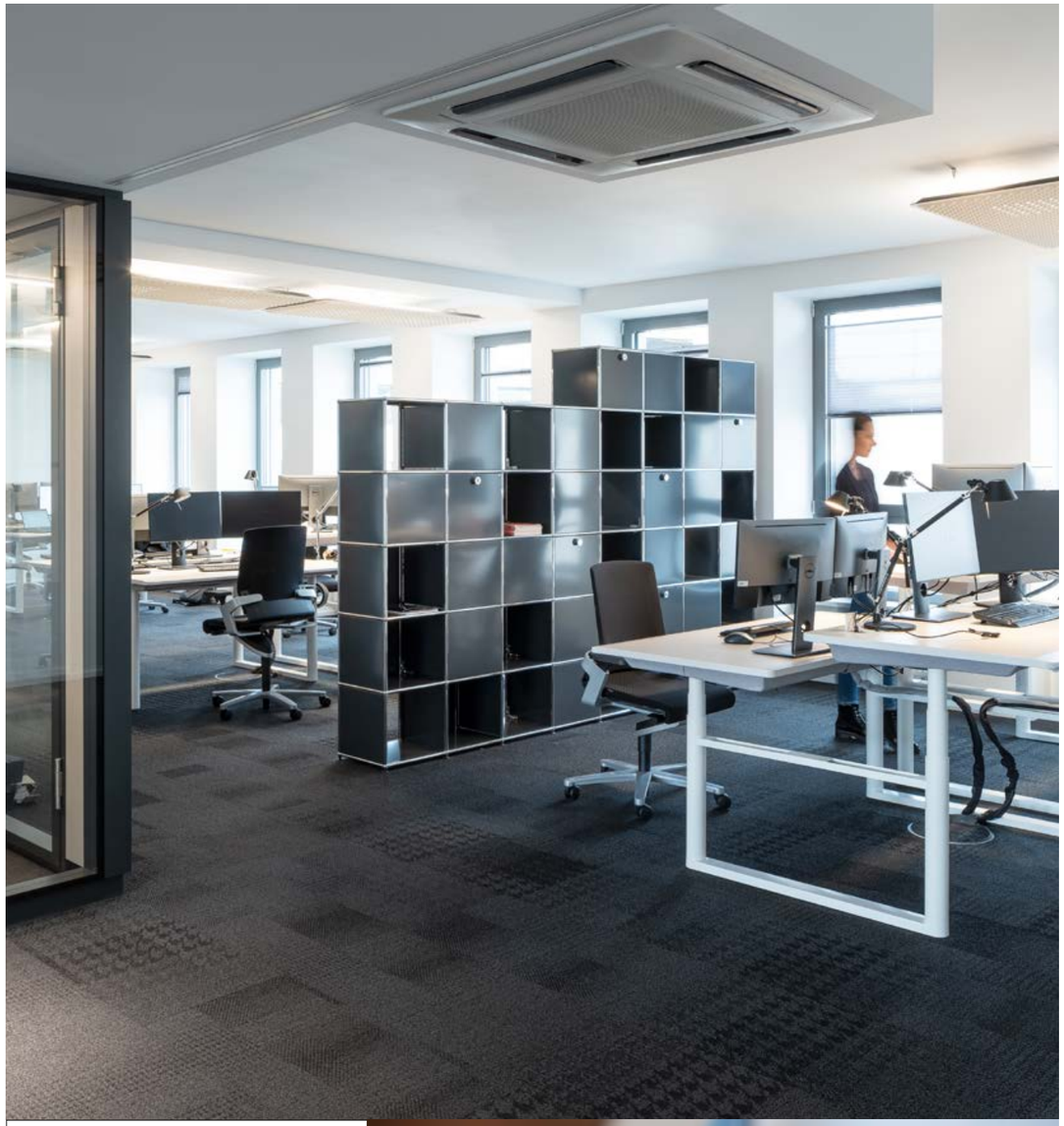
At your desks, get set, go! The smart way, how else?

New ways of working need new office concepts. Business trips or working from home often leave office desks and workstations unused. Campana & Schott uses a Smart Workspace FlexDesk solution to organise flexibility in places for its staff to work at. Based on real-time data provided by the HPD2 optical sensor from STEINEL, staff in most cases look for a vacant office workstation via app even while they are on their way to work. This makes optimum use of office space capacity and saves costs.



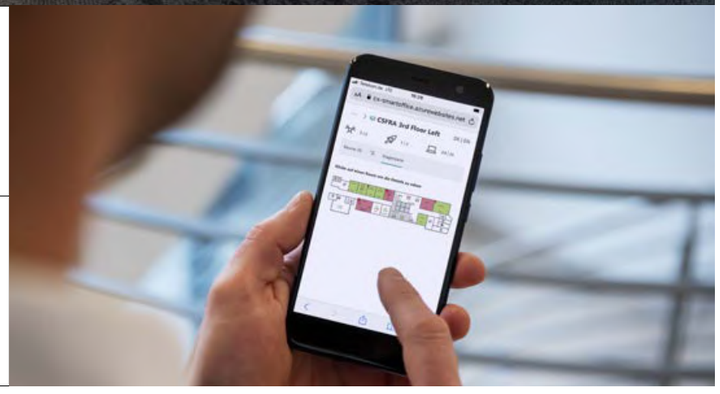
HPD2 / HPD3

The **HPD2 optical sensor** detects how many people are present in a given area. Here, an area of up to 100 m² can be divided into as many as 10 zones.



Goodbye FixDesk. These days, many employees don't need a set desk or workstation any more because they are away on business or work from home.

Seeing which desks are free. Even on the way to the office, employees can reserve a vacant office desk by app.



Meetings are part of business. The desire for freedom part of human nature.

At Campana & Schott in Frankfurt, project teams not only benefit from attractive meeting rooms but also from intelligent meeting-room management. The Smart Workspace solution produces maximum transparency and makes everyday office routine easier to organise. Rooms are booked via the web – on the basis of digital data provided by the HPD2 optical sensor on every aspect of the way in which rooms are being used. Assistance systems help staff to look for vacant room space.

5

Persons in the room

60 %

Humidity

22 °C

Temperature

Room booked until

10:45

Next Meeting:
11:00 - 12:00

Booked by:
B. Emondts

The **HPD2 optical sensor**
The HPD2 detects whether and how many persons are in a meeting room. A single HPD2 sensor is enough to watch over a room with up to 100 m² of floor space.

Chat Bot and Digital Signage
Assistance systems help to look for vacant meeting rooms, saving precious time.

No reserved space left standing empty
Based on Microsoft Teams, the Chat Bot issues a reminder that a room has been booked.

Booking flexibility
Reservations can be made from anywhere with the web-based solution.

Comprehensive analysis
Conclusive key figures on individual rooms, floors and the whole building.

Office & Workspaces

High-priced locations demand efficient use of space. This is where Smart Workspace helps us. The app perfectly integrates into everyday office routine. The HPD 2 is the sensory organ of the building and gives us the information we need to optimise our floor space on the basis of actual data and not on gut feeling.

Boris Ovcak
Director Campana & Schott GmbH

Intelligent sensors make the difference. In every aspect of new working worlds.

Everyone's talking about New Work.
STEINEL has the right products, answers and services.

Small offices

Unobtrusive and particularly slim. Using its all-round vision, the **IR Quattro MICRO presence detector** switches light on and off in smaller-type offices.

Offices / meeting rooms

The **True Presence® multisensor** detects poor air quality and lighting in offices and meeting rooms, and helps to create a good indoor climate to work in.

WC / washrooms

Also detecting movements behind partitions, the **HF 360-2** high-frequency **presence detector** provides automatic lighting in WC facilities.

Outdoor areas

The **IS 180 digi HD motion detector** doesn't care which direction it is approached from. It switches light on and off all around the building with absolute perfection.

Find out more at steinel.de/office

Needless to say, we knew zero-carbon parking would one day become reality. But in all honesty: seeing us now so close to it really has surprised us. And, of course, given us tremendous motivation to continue pressing ahead in the Parking & Transportation segment.

Steffen Matthias
Head of Project Sales

Parking & Transportation

The underground car park that drives a better deal. Compelling figures from Zurich.

The atmosphere and sense of security in multi-storey and underground car parks often leave much to be desired. Added to this is often a disproportionately high level of energy consumption from extravagant permanent lighting. Since 2019, a remarkable pilot project in Zurich/Heuried has been demonstrating that there are other ways.

Parking & Transportation

Underground car park in Heuried, Zurich. A tangible vision of zero carbon parking.

Until recently, the Heuried underground parking facility in Zurich was a very normal underground car park in a very normal residential area. It was lit by 56 watt fluorescent lamps that presence detectors switched on and off in relation to use. In 2019, as part of the technical refurbishment work on a pilot parking level, 344 fluorescent lamps were replaced by 240 wirelessly interconnected sensor-switched LED linear luminaires of type RS PRO Connect 5100 LED from STEINEL. The result: incredible!

360

Parking spaces on a total area of 7360 s.qm., previously illuminated by 344 fluorescent lamps.

240

Newly installed RS PRO Connect 5100 LED luminaires. Interconnected via Bluetooth, the sensor-switched LED-linear luminaire is easily configured by app.

-92%

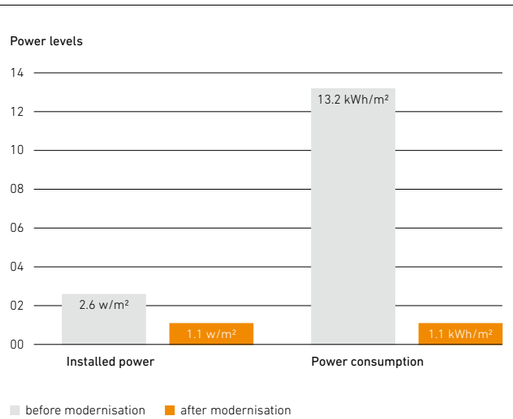
Energy consumption with intelligently interconnected lights.

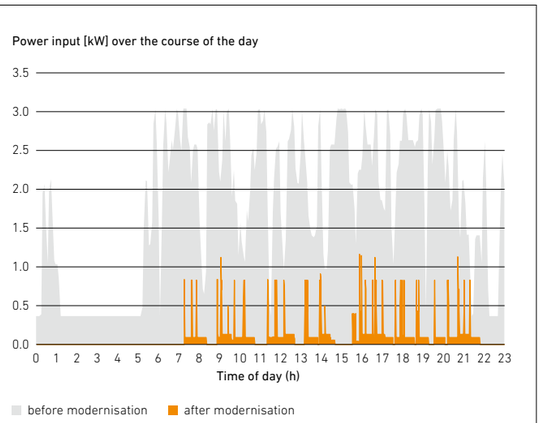
30%

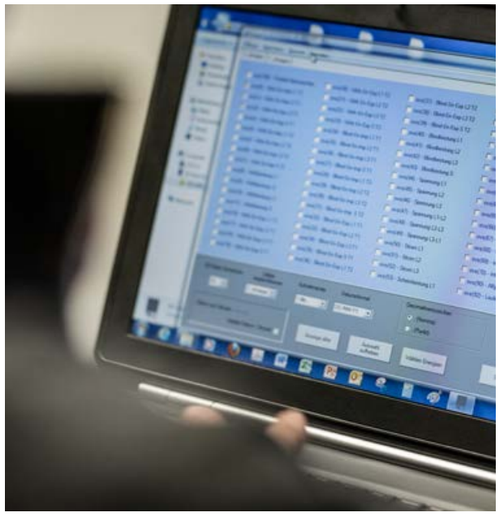
Fewer luminaires than before technical modernisation.

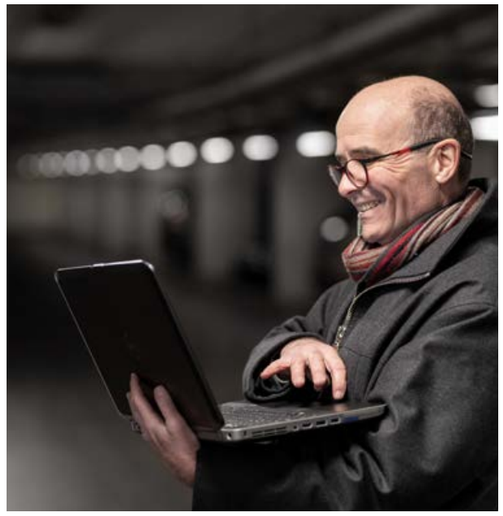
80%

Higher level of light on average - from 120 to 220 lux.

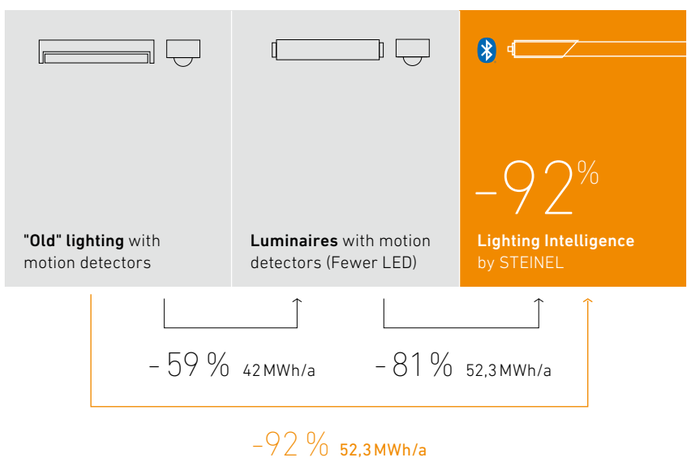


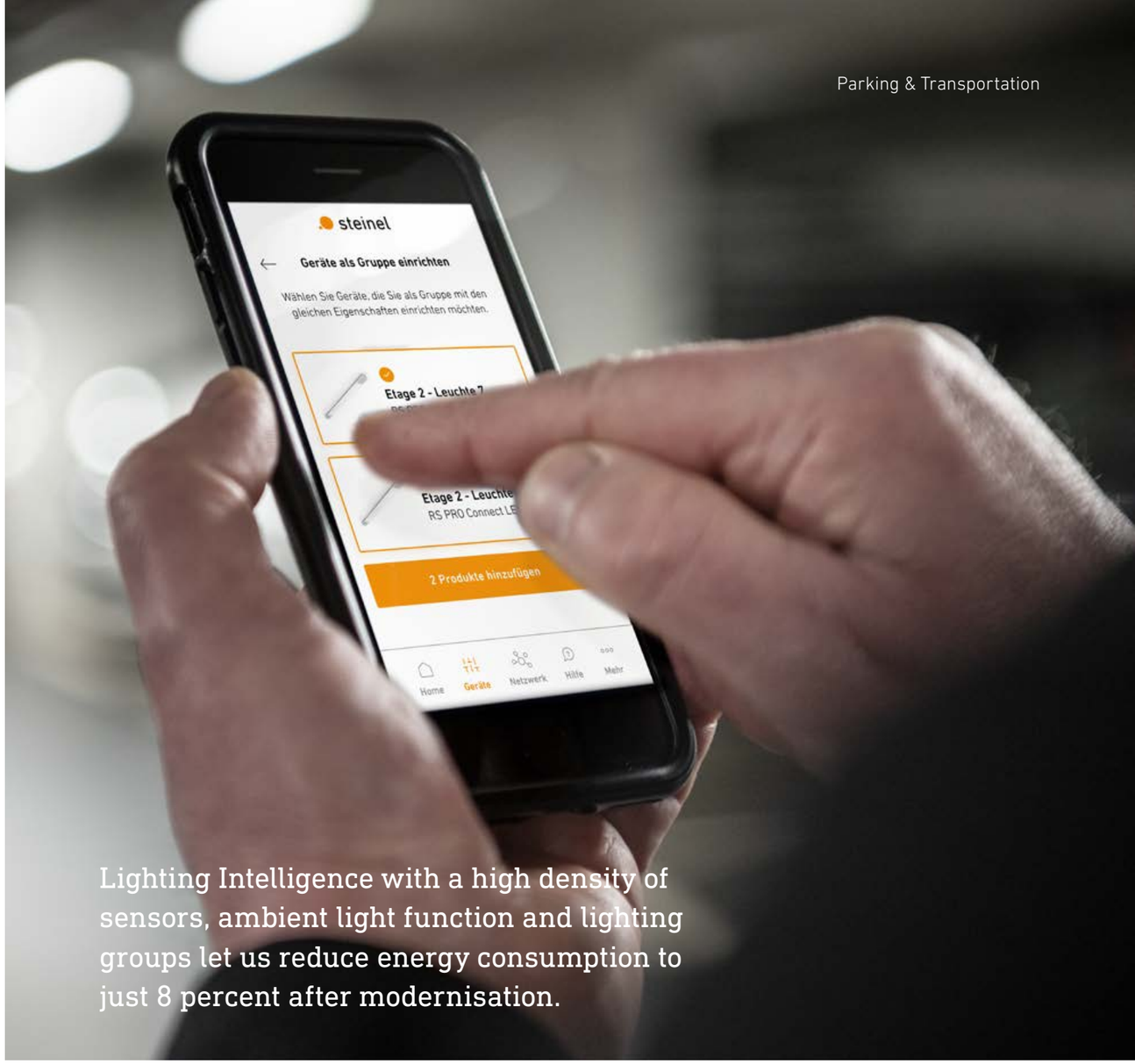






Modern LED lighting combined with motion detectors alone can save a lot of energy. But a lot more can be done. To do it, the LED luminaires and motion detectors must be integrated into a carefully thought-through lighting-management system. Intelligently controlled and grouped, this produces a further potential saving of a phenomenal 81%.





Lighting Intelligence with a high density of sensors, ambient light function and lighting groups let us reduce energy consumption to just 8 percent after modernisation.

Investing in a modern lighting solution quickly pays off for car-park operators.

This is made abundantly clear by the example of Heuried. STEINEL's project partner wanted to know exactly: "We installed our own measuring device and found that much of the energy savings are not made by LEDs alone but in fact by controlling them; by the intelligent interplay of lights, by dimming and switching them off", says Stefan Gasser, Managing Director of eLight GmbH.

Light accompanies the user throughout the underground car park. And is only switched on where it is actually needed. For this, four light groups were configured which are intelligently controlled.

Switching to a 10 % basic light mode after one minute once everyone has left, and switching off completely after 10 minutes produces an energy saving of 92 %. But it was also possible to improve the quality of light as well as the sense of well-being and security: "Our measurements showed an overall higher light level and better illumination", Gasser says.

We were certain of saving a lot of energy by installing latest-generation luminaires. What did impress us, though, was the fact that interconnecting and intelligently controlling the luminaires increased the energy saving many times over. We were very pleasantly surprised in the end to discover it was even over 90 %.

Stefan Gasser
Managing Director, eLight GmbH, energy adviser to the City of Zurich

Intelligent Lighting makes multi-storey car parks better places. Including stairwells and side rooms.

Who, in fact, says underground and multi-storey car parks need to be uninviting and oppressive? Intelligently controlled, sensor-switched LED luminaires from STEINEL put an end to dark corners.

Parking spaces

With its all-round vision and extreme far-sightedness, the **IS 3360** infrared **motion detector** watches over expansive areas on parking decks and in underground car parks.

Vehicle / pedestrian entrances

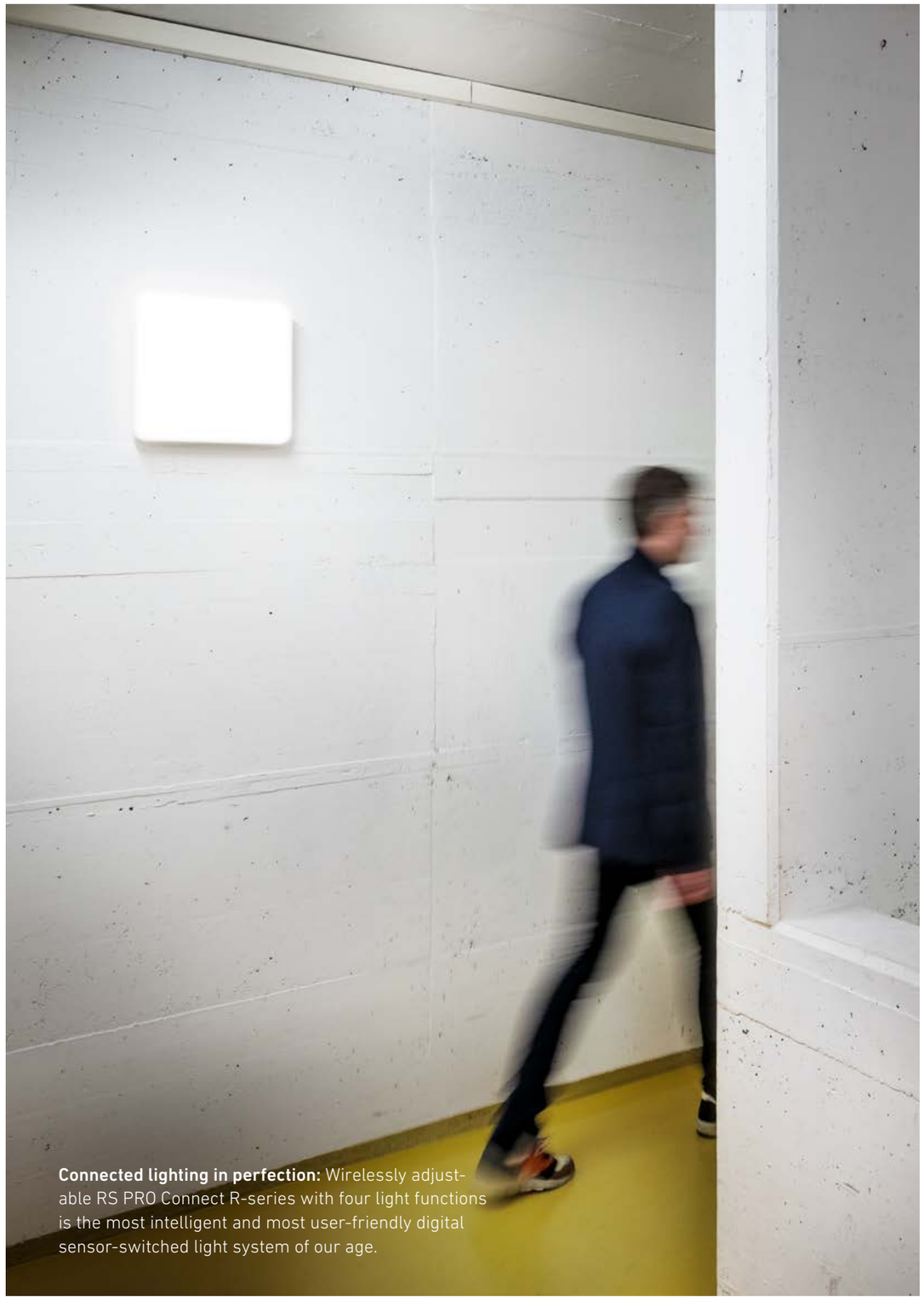
Adjustable with metre precision and with large, scalable reach, the **sensIQ S motion detector** switches on light at vehicle and pedestrian entrances.

Stairwells

Its ability to see through barriers makes the **HF 360-2** high-frequency **presence detector** ideal for identifying movements in adjoining stairwells.

Stairwells

The **RS PRO Connect R20+ Q** permits wireless interconnection. At the same time, 2 shapes and 3 sizes provide the choice needed to suit any application.



Connected lighting in perfection: Wirelessly adjustable RS PRO Connect R-series with four light functions is the most intelligent and most user-friendly digital sensor-switched light system of our age.

Find out more at steinel.de/parking

Good atmosphere for learning in?
At STEINEL, we take that literally.
It stands to reason that good lighting and good air in the classroom makes it easier for students to learn.
At any rate, we have done our home-work on the subject of Education.

Stefan Muth
Head of Product Management Sensors & Sensor Lights

Climate change in the classroom.

Sit, not good enough! Often, the quality of air in classrooms is anything but top class. No wonder. Frequently, more than 30 students plus teacher sit in one room for hours on end. Learning, laughing, yawning, sneezing, breathing. Sometimes letting fresh air in, but in most cases not often or long enough. The level of CO_2 rises, oxygen content and concentration fall. What can be done about chronically poor air in the classroom?

80% of all school classes sit in rooms with CO_2 levels that are too high. The consequence: tiredness, headaches, lack of concentration and a higher risk of falling ill.

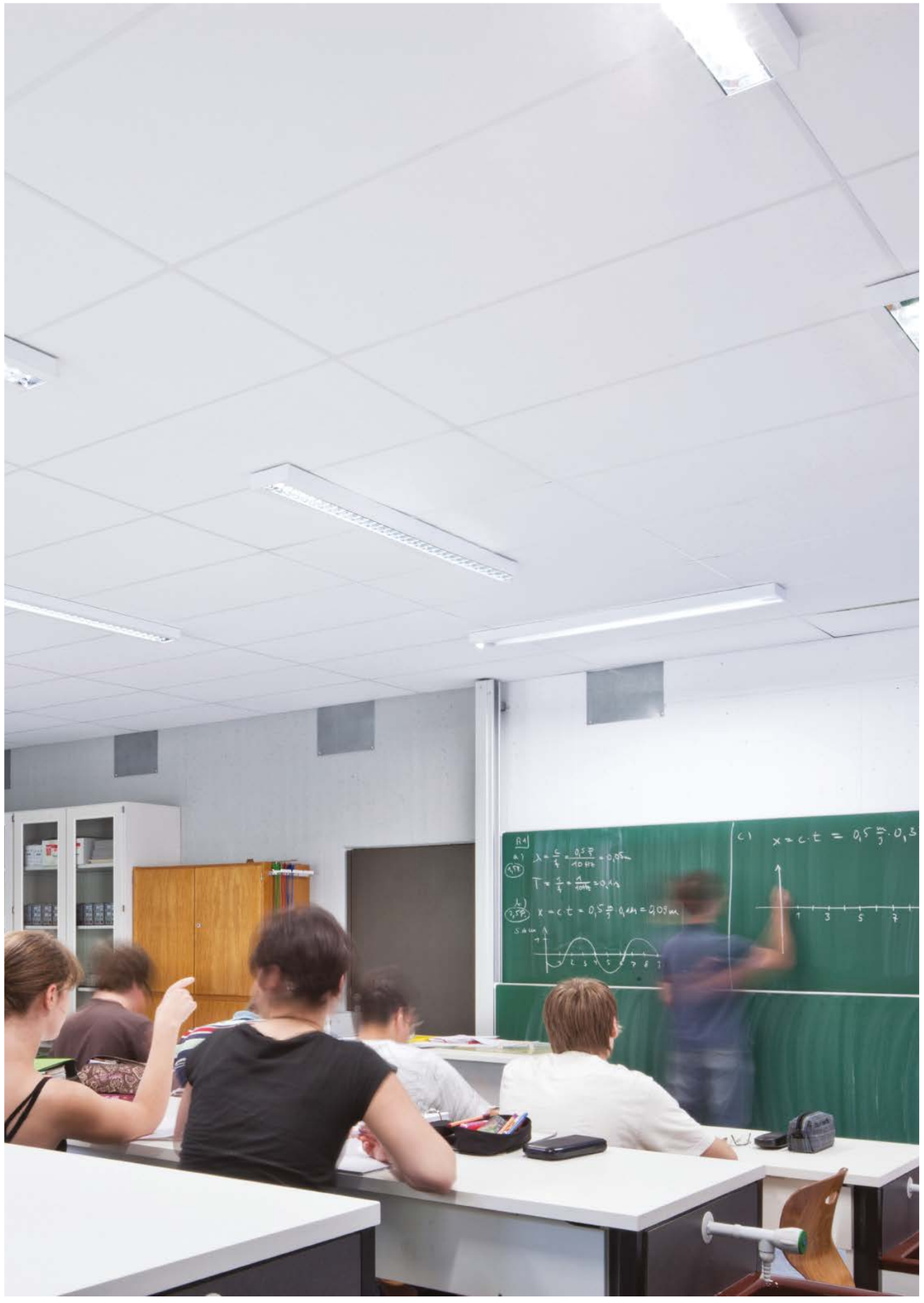
A good indoor climate doesn't produce any Einsteins. But it's a relatively good start.

The ability of school students to concentrate and their learning success rate crucially depend on a good and healthy indoor climate in the classroom. Intelligent sensors from STEINEL have a nose for stale air and can do a lot to improve indoor climate and an atmosphere conducive to learning.

Ideal conditions for healthy learning:

100	300	21	40 - 60	<800	<100	1,000
True Presence (%)	Brightness (lx)	Temperature (°C)	Humidity (%)	CO_2 (ppm)	VOC (ppb)	Air pressure (mbar)

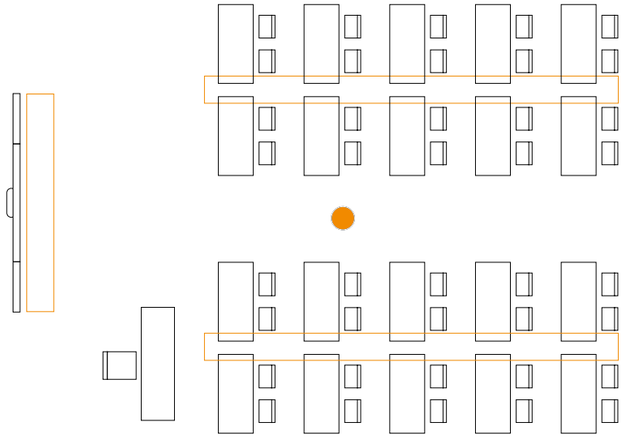
Yes, they do exist. Sensors that make classrooms more energy-efficient and perk up tired school children. With its seven senses, the True Presence® Multisensor also makes it possible to measure brightness, room temperature, humidity, CO_2, air quality, volatile organic compounds (VOC) and air pressure. In conjunction with modern building automation, it controls all parameters that promote a healthy classroom climate for learning in.



Intelligent sensor technology saves lots of energy. Including that of students and teachers.

One in every two schools in Germany works with lighting technology that is over 25 years old. But converting it to modern LED technology is only the first step. Intelligent lighting control using presence detectors can also save a lot of money – and optimise the atmosphere for learning in. Because not only good air, but also good lighting is essential for healthy learning. For instance, a constant lighting control system that includes the component of daylight always dims the level of light in the way required for optimising the ability to learn.

The **IR Quattro HD DALI plus** provides everything that is needed for intelligent lighting control in the classroom. By STEINEL app, as many as 64 lights can be controlled via three addressable lighting channels.



3

Light channels are available.

64

It is possible to control as many as 64 lights.

Building Intelligence is teaching lessons. Not only in the classroom.

Entrance area, assembly hall, auditorium, stairs, staff room, gym, changing rooms, toilet facilities – schools and universities have many function zones. STEINEL has sensor solutions tailored exactly to suit any requirement and room situation.

Classrooms / sports halls

No movement escapes the **IR Quattro HD-2 presence detector** - whether that of students at their desk in the classroom or exercising in the sports hall.

Corridors

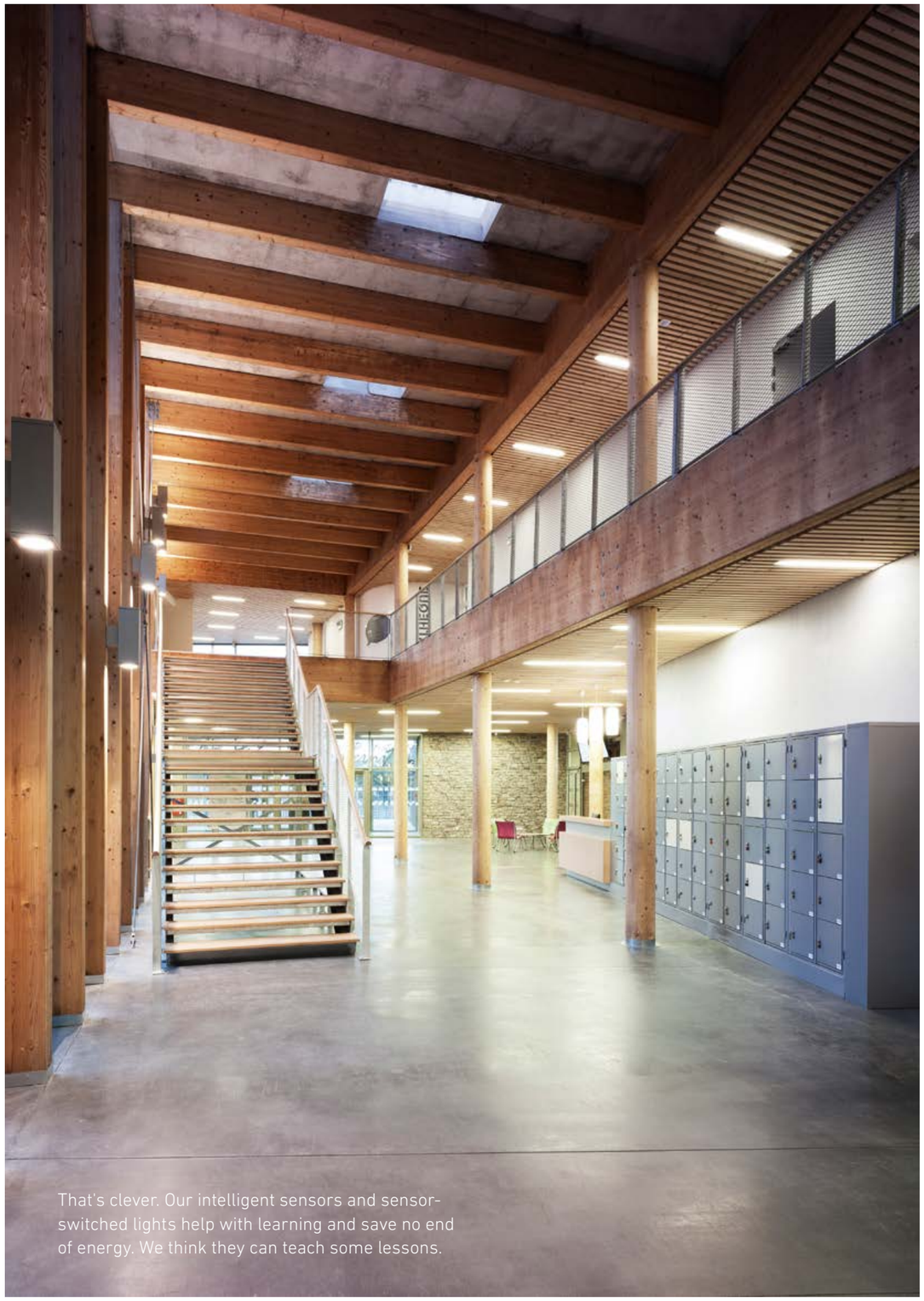
It is specialized in identifying movement in long narrow school corridors. Even installed in a concealed position, the **Hallway corridor sensor** can be adjusted via Bluetooth by app.

WC / washrooms

The **HF 180 presence switch** reliably switches light in the school's toilet facilities and detects movements through cubicle partitions.

Lecture theatres / seminar rooms

The **HPD 2 optical sensor** counts the number of school children in a classroom, or students in the lecture hall, and controls heating and ventilation on the basis of how many persons are present.



That's clever. Our intelligent sensors and sensor-switched lights help with learning and save no end of energy. We think they can teach some lessons.

Find out more at steinel.de/education

Most of the time, you can sense whether or not a building feels good the moment you step inside it. Sometimes it's just little changes that can enhance the feel-good factor. Bluetooth and intelligent connectivity are the key to perfect building automation in the Apartment Building.

Enrico Enge
Project Manager

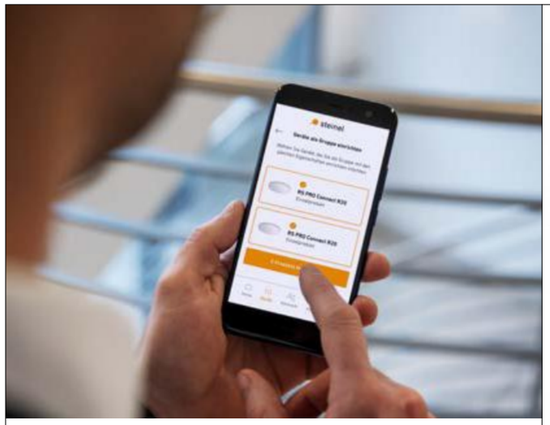
Apartment building

Intelligence pays off. Also in residential complexes.

Whether six or 600 units – in residential construction, considerable savings potential can be unleashed today without much cost and effort. The key to this: Connected Lighting. Yet intelligent lighting systems not only reduce energy consumption in communal areas. They also enhance comfort and security as well as the value of the property as a whole.

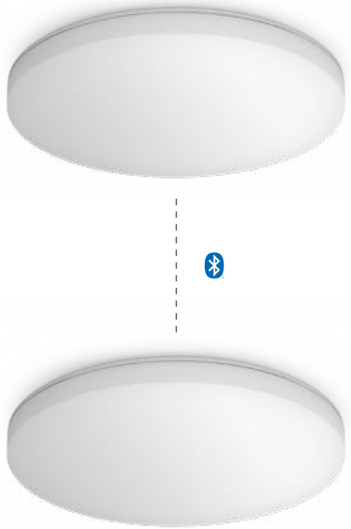
Simply talk to each other. Just like our Bluetooth lights do.

Bluetooth lights open up all manner of options. Such as the ease of interconnecting and setting neighbouring groups via app. Added to this comes smart metering and monitoring data from individual luminaires as well as valuable analysis information on all aspects of the lighting network. It is on this basis that parameters, such as stay-on times or light levels, can be adjusted as required. This way, owners can increase building efficiency while residents feel safe and secure throughout the building and also benefit from lower costs.



Throughout every part of the building, sensors and sensor-switched lights are interconnected without cables and can be controlled via app with incredible ease.

RS PRO Connect R-Serie



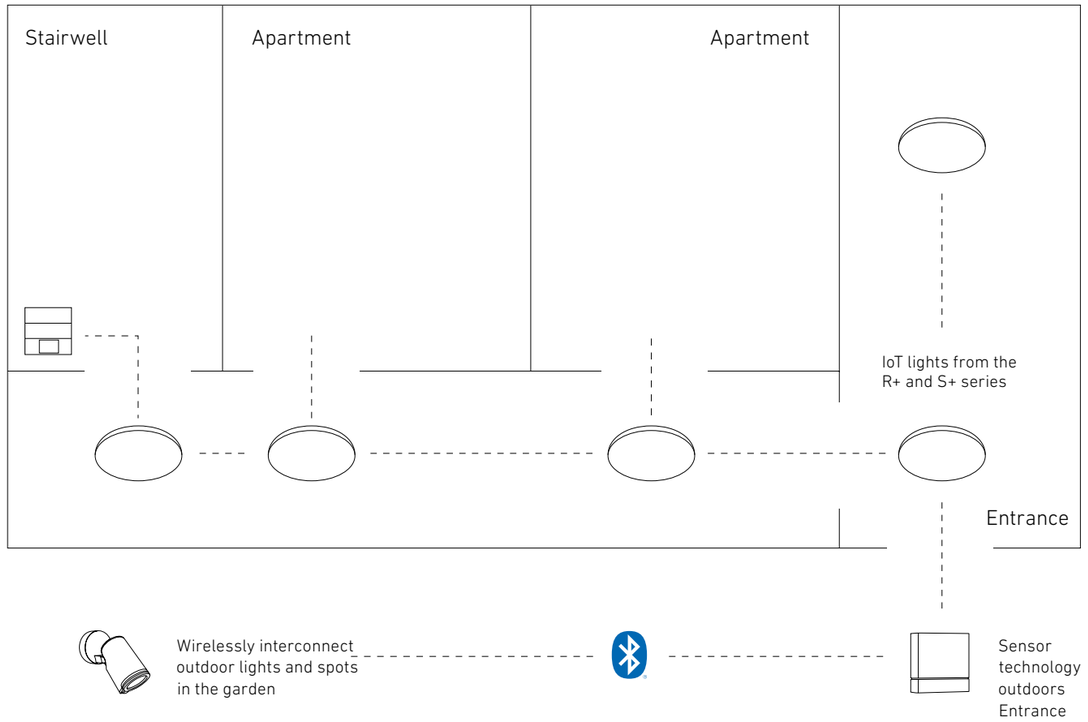
Bluetooth is the language that connects the different luminaires in residential buildings, bringing them together to create an intelligent lighting network.

Apartment building

Intelligence is good. Connected intelligence is better.

Bluetooth-based lighting intelligence guarantees maximum comfort and convenience in return for minimum energy consumption.
And provides the capability of interconnecting different luminaires in various parts of the building - regardless of product and space.
This way, for instance, the light at the entrance can be linked to the lighting in the stairwell. So that light switched on automatically only wherever it is really needed.

Light accompanies residents from the building entrance to the door of their apartment



Good neighbours talk to each other. Good sensors too.

Communication is everything. That also goes for modern building automation. This is why the STEINEL line-up features the right sensors and sensor-switched lights for every building sector.

Stairwells

Its ability to see through barriers makes the **HF 360-2** high-frequency **presence detector** ideal for identifying movements in stairwells.

Corridors

Conveniently operated via Bluetooth by app, the **Hallway corridor sensor** registers the movements of residents in long corridors and passageways – even when installed out of view.

Stairwells / corridors / entrances

For automatic lighting in stairwells and entrance areas, the **RS PRO Connect S30+ Q** is perfectly suited as an alternative to the R series.

Entrances

The **iHF 3D** is connected to the lighting in the entrance zone and switches light on whenever a person approaches the building.

Our sensors for residential and apartment buildings combine on-demand lighting with incredibly easy installation and wireless connectivity.

Find out more at steinel.de/apartment-building

No joke: electricity costs cut by almost € 40,000 a year! Merely by converting a normal warehouse to higher-efficiency lighting. Tailor-made sensors, intelligent lighting control – job done! Our solutions for Industry & Logistics soon pay off. Very quickly.

Stephanie Kühnel
Sales Team Lights & Sensors

Industry & Logistics

Potential savings. Right up to the ceiling.

The last one switches the light off? No necessarily. Fortunately, there are better solutions today to make warehouses and industrial buildings more energy efficient. Besides the consistent use of LED luminaires, integrating intelligent lighting control also plays a major part. Also in terms of lighting quality.

Someone needs a clear picture. The IS 345 MX Highbay has one. Always.

The test premises: a 1,551 m^2 warehouse building with 7 aisles, each 40 m long. The mission: to get the warehouse on the cutting edge of technology as well as match sensors and lighting management to the requirements of the narrow aisles and high ceilings with optimum results. The result: significantly lower climate-relevant energy consumption and emissions.

1551 m^2	7	-73 %
Technical modernisation of a warehouse building with an area of 1,551 m².	Aisles in the high-bay warehouse, each with two IS 345 MX Highbay sensors.	It was possible to cut operating costs by a total of 73 %.

Calculation for 10 years

Energy used	[kWh]	295,217.80
Energy needed	[kWh]	79,708.81
Energy wasted	[kWh]	215,508.99
Energy price per kWh	[€]	0.17
Total saving	[€]	**36,636.53**

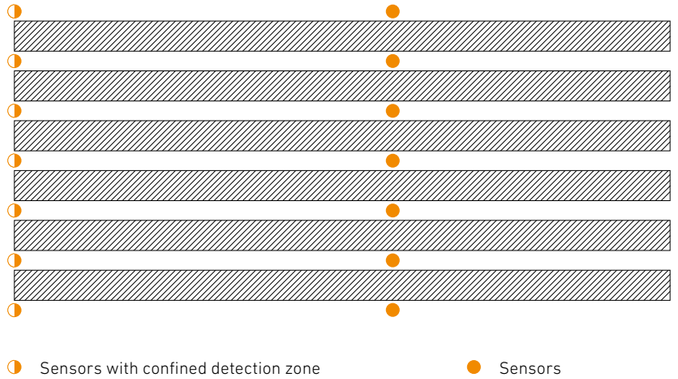
IS 345 MX Highbay

Surveillance on the highest level: infrared motion detector IS 345 MX Highbay for indoors and out, ideal for large heights in depots, high-bay warehouses, machine shops, check-in areas and departure lounges, installation height 14 m, detection zone 30 x 4 m (radial), large terminal compartment for easy installation.

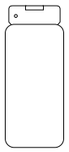
30 x 4 m

With its aisle-typical detection footprint, each sensor covers aisles up to 30 m on length.

Perfectly defined
The detection zone was matched exactly to the ends of the aisle. Precision separation of main and shelf aisle means that light in the shelf aisle really does only come on when someone enters the shelf aisle.



Simple and intuitive.
Using the LiveLink lighting management system, DALI-based sensors and luminaires can be integrated into a sensor-controlled lighting concept. Incident daylight can also be taken into account. Depending on intensity, the light is dimmed or switched off completely.



Smart Remote
In view of the mounting heights involved, the STEINEL app makes adjustment and operation particularly practical.

A world of its own.
Sensor solutions for industry.

Whether high-bay warehouse or commercial property, whether production shop floor or outdoor area – intelligent sensor technology from STEINEL is heralding in the future.

Areas

An area of up to 1000 m² can be covered by just one **IS 3360 MX Highbay motion detector**.

Outdoor areas

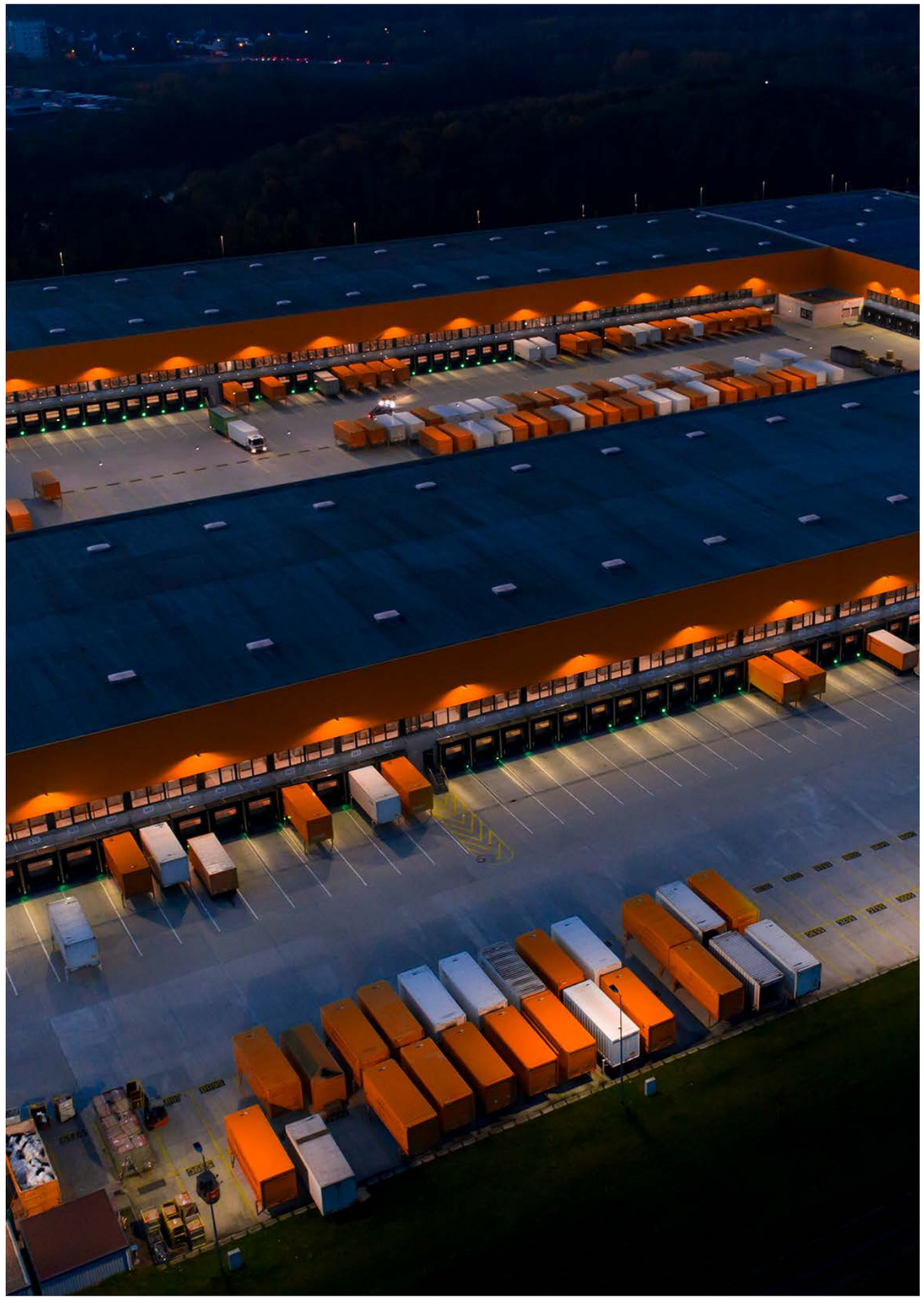
With a mounting height of up to 6 m, the **XLED PRO Square** and **Wide LED** floodlights are ideally suited for truck loading bays, access roads and manoeuvring areas.

Work environments

Whether seated activities or physical work – even in rooms with high ceilings, the **IR Quattro HD-2 presence detector** misses no movement whatsoever.

WC / washrooms / changing rooms

Its ability to see through barriers makes the **HF 360-2** high-frequency **presence detector** ideal for toilet facilities and changing rooms.



Find out more at steinel.de/logistics

Insane, actually, when you think that nursing care in particular leaves hardly any time for people-to-people contact. We want our solutions from Health & Care to change all that. Needless to say, the most intelligent of technology can't replace nursing staff either. But it can provide meaningful assistance.

Hendrik Beinke
Product Manager Building-Intelligence-Solutions

It's about the individual. Not about the technology.

Determining your own life for as long as possible – who doesn't want that? Times of demographic change and longer life expectancy call for new ideas. How can intelligent technology provide meaningful every-day assistance for the elderly and people in need of care as well as their relatives and carers so that there is more time for the human element?

We help people to continue living in their own four walls and reduce the work of in-patient nursing staff.

Hendrik Beinke
Business Development Manager Health & Care

Care needs proximity. And finely tuned sensor technology.

Intelligent technology enables elderly people to stay in their familiar surroundings for longer or helps nursing staff in everyday care routine. This is where the combination of advanced sensors helps to ascertain new, relevant measurement variables.

True Presence® Multisensor
Specialist in true presence and good indoor climate.

RS PRO Connect R-Serie
Diverse, interconnected lighting

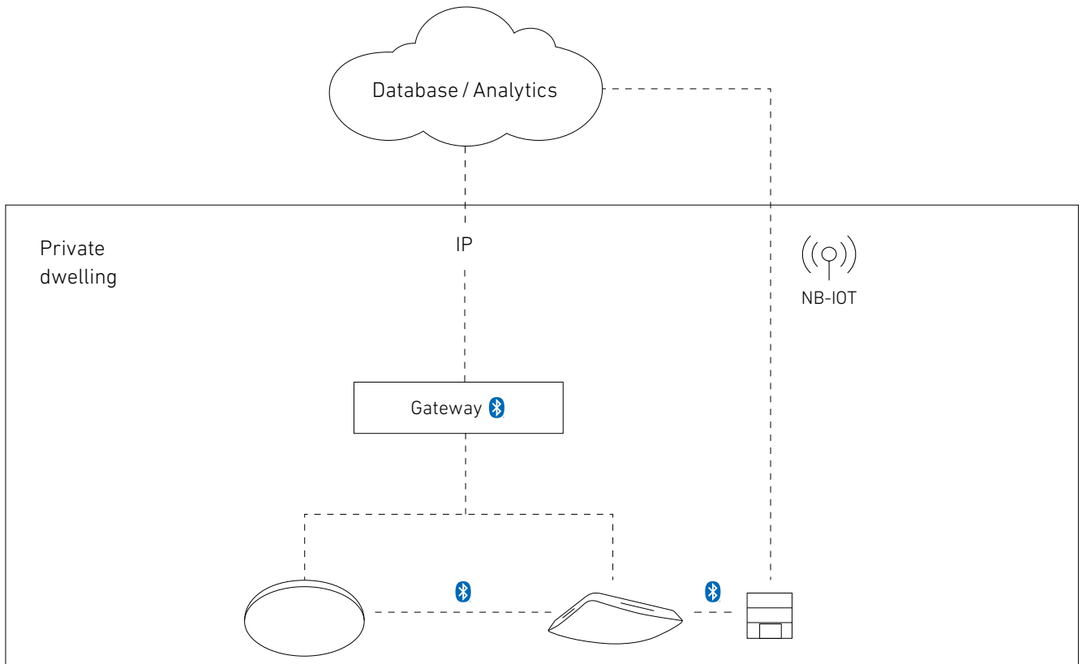
MotionSwitch LED
Alarm button, orientation light and motion detector

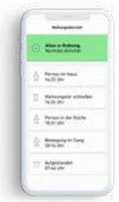
HPD 2
Counts persons in the room.

Presence	Daily routine	Comfort
Activity	Hygiene	Anomaly detection

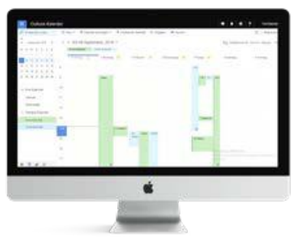
Greater efficiency in providing care. And a good feeling.

Digital assistance in health & care, for in-patient nursing or at home. Embedded in an interconnected solution, data or anomalies captured by sensors can be analysed and communicated to mobile care services or relatives.





Reassured relatives
Relatives are always well informed and quickly alerted in an emergency.



Flexible care service
Nursing care services can use the data for planning their rounds more systematically or for providing care in a more effective way.

The dashboard displays an overview of all rooms on the particular ward. As a result, nursing care staff on duty are always informed on the resident and can take selective action whenever necessary.

Support for the care team. Digital assistance for in-patient carers.

Sometimes, one carer in nursing homes is responsible for as many as 60 persons in need of care during the night. Good to know where everything's okay. With an exact picture of the ward, staff can target help wherever it is needed.

Name:	**Mia Maier**	Relatives:	**Jens (child)**	Care level:	**3**
Age:	**76**	In care since:	**2015**	Medication:	**Dormicum**
Weight:	**55 kg**	Anomalies: -		Allergies:	**Yes**

Yes Movement in the bath	21,5 °C Room temperature	48 % Humidity	1050 CO_2
		300 Light level	300 VOC

Monitoring limit values
The True Presence® Multisensor, for example, draws attention to poor air.

Automatic notification
For instance, when a person stays in the bathroom for an unusually long time.

Targeted assistance
Faster and more efficient help from nursing care staff.

Every facility is different. We are prepared for this.

With tailor-made sensor and lighting solutions that make everyday life friendlier and better in care homes.

Stairwells / WC / washrooms

The **HF 360-2** high-frequency **presence detector** with its ability to see through barriers is suitable for detecting movement in stairwells.

Common rooms / dining rooms

No movement escapes the **IR Quattro HD-2 presence detector** - regardless of whether it is used for administrative activities in the office or in the dining room of a care home.

Corridors / side rooms

For greater safety and energy efficiency, the **IR 180**, as a presence switch, reliably switches on light in the corridors of care facilities.

Hallways / stairwells

Automatically and reliably. Light from the wirelessly interconnectable **RS PRO Connect R20+** is valued by residents in care homes.

Find out more at steinel.de/healthcare

Things are progressing. The self-learning building is moving ever closer. The basis for this: High-End Sensor Technology and Connectivity. As sensory organs, ever better sensors are delivering ever more accurate data. And connectivity via Bluetooth is a veritable quantum leap for building intelligence.

Torsten Born
Head of Research & Development

To create Building Intelligence, we have invented a sensor that counts what matters. People.

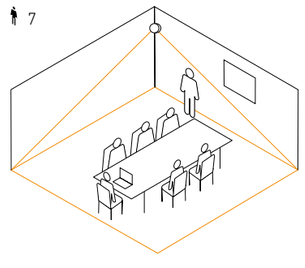
What is happening where? What if a sensor could tell you that? The HPD 3 with optical presence technology can. Wherever you want to know how many people are present at a certain location, the HPD 3 can provide the information you need. Information in a dimension that still is to be fully explored. Digitisation and interconnection in building automation is gathering ever more speed.

This includes sensory organs that make it possible to analyse specific zones. How many employees are in the office? Which desk is being used?

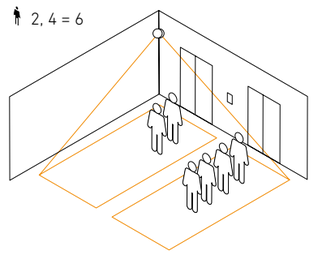
Are there any delays in front of the elevators? Where is there a vacant meeting room? Is there a queue at the checkout? There are an infinite number of examples that show how important it will be to know more and more within the building. The right information is not only needed for interaction within the building management system, but also for improving organisation and optimising processes. The HPD 3 can provide it. **Reliably and precisely.**

Output of temperature and humidity measured, VOC, CO_2 equivalent.

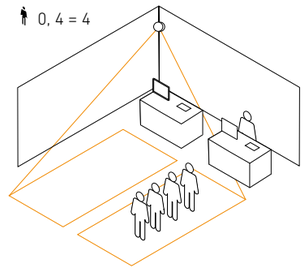
10 m reach with 10 precisely definable detection zones.



Reliable detection of the number of people in a room.



Live information on utilisation and frequency.



Data provided for situation analysis.

HPD2
Detects human presence, brightness, temperature, humidity

HPD3
The HPD3 detects additionally also VOC and CO_2 equivalent

The world's first true presence detector. We feel that the digitisation of buildings is only just beginning.

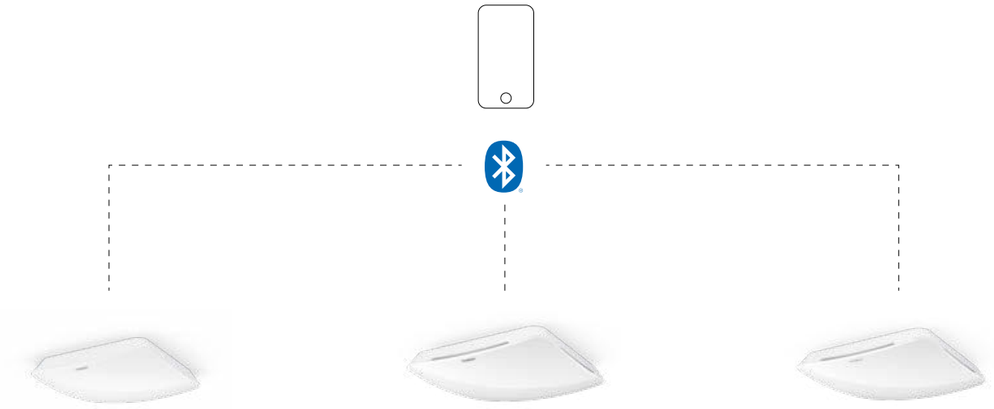
Building intelligence starts with sensory perception, in the same way as it does with humans. Sensors record data and transmit this to a central processing unit where it is analysed and evaluated. Based on this analysis, information is provided for controlling the building's technical actuators. The intelligent building gathers knowledge over time and automatically optimises its performance through a continuous process of learning.

True Presence® can detect true human presence in the room no matter what these people are doing.

Long stay-on times are no longer necessary. For the first time, the information on the "presence of a person" becomes a reliable parameter for controlling a building. Already marketable, this new technology is opening up unimagined applications. Combining True Presence® with the detection of temperature, humidity, air quality, VOC, CO_2 and brightness makes sensors real sensory organs and gives your building **the information that is necessary for true Building Intelligence**.

GERMAN DESIGN AWARD 2019

True Presence (%)	Brightness (lx)	Temperature (°C)	Humidity (%)	CO_2 (ppm)	VOC (ppb)	Air pressure (mbar)



True Presence®
Detects the presence or absence of persons over an area of 64 sq.m. with absolute precision and reliability.

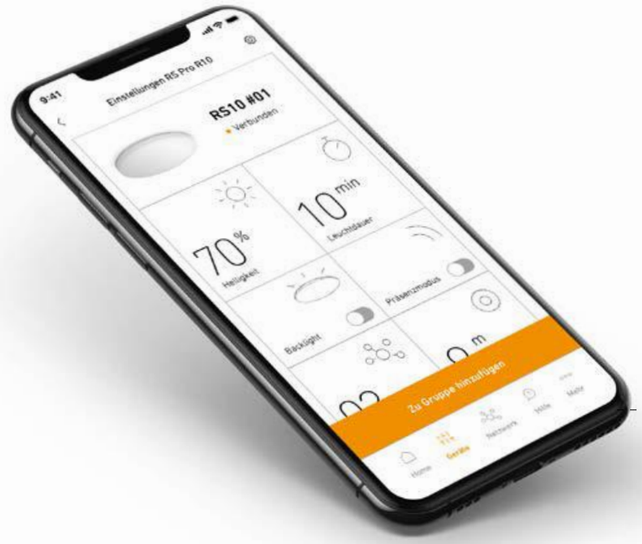
Multisensor
Detects human presence, light level, room temperature, humidity, air quality, VOC and CO_2.

Multisensor Air KNX
Measures temperature, humidity, light level, air pressure, VOC and CO_2 content.

From connected home to IoT and cloud services. Planning, installation, adjustment and interconnection made easy.

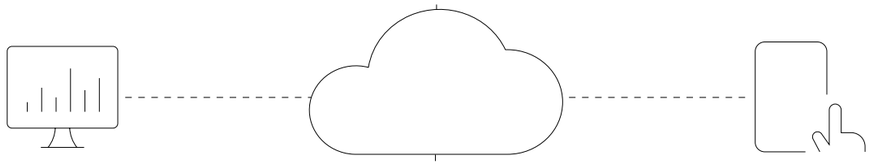
As a globally acknowledged standard for wireless data communications, Bluetooth is used by virtually every smartphone user. It is easy to use and transmission is encrypted and without gateway. In the audio domain, the high level of communication security is a valued aspect.

All reasons that left us in no doubt. In the meantime, over 100 STEINEL products can be adjusted, operated and interconnected via Bluetooth. **For greater versatility, convenience and energy efficiency.**



3. Bluetooth IoT

The data for all products can be provided and processed via a cloud system



Analytics & Monitoring
Luminaires and sensors provide data on usage times and energy consumption for analysing and assessing efficiency.

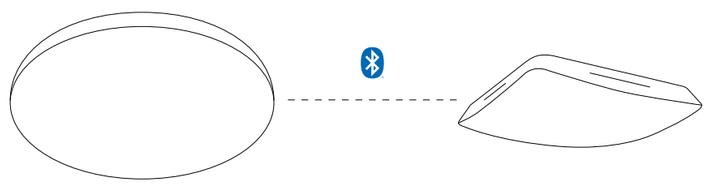
Services & Apps
Apps and digital services developed with a specific application in mind help to utilise data in everyday routine.

Gateway

2. Lighting Intelligence

Intelligent network. Foolproof connectivity combined with intelligent control provides the key to even greater energy savings and efficiency. High sensor density and connectivity permit intelligent lighting control with elevated potential savings. Intelligent lighting control has never been easier.

1. Bluetooth Mesh



Rather than the complication of laying cables, Bluetooth Mesh makes easy work of interconnecting several lights via the STEINEL Connect app to create lighting groups.

Your direct contact to the solution:

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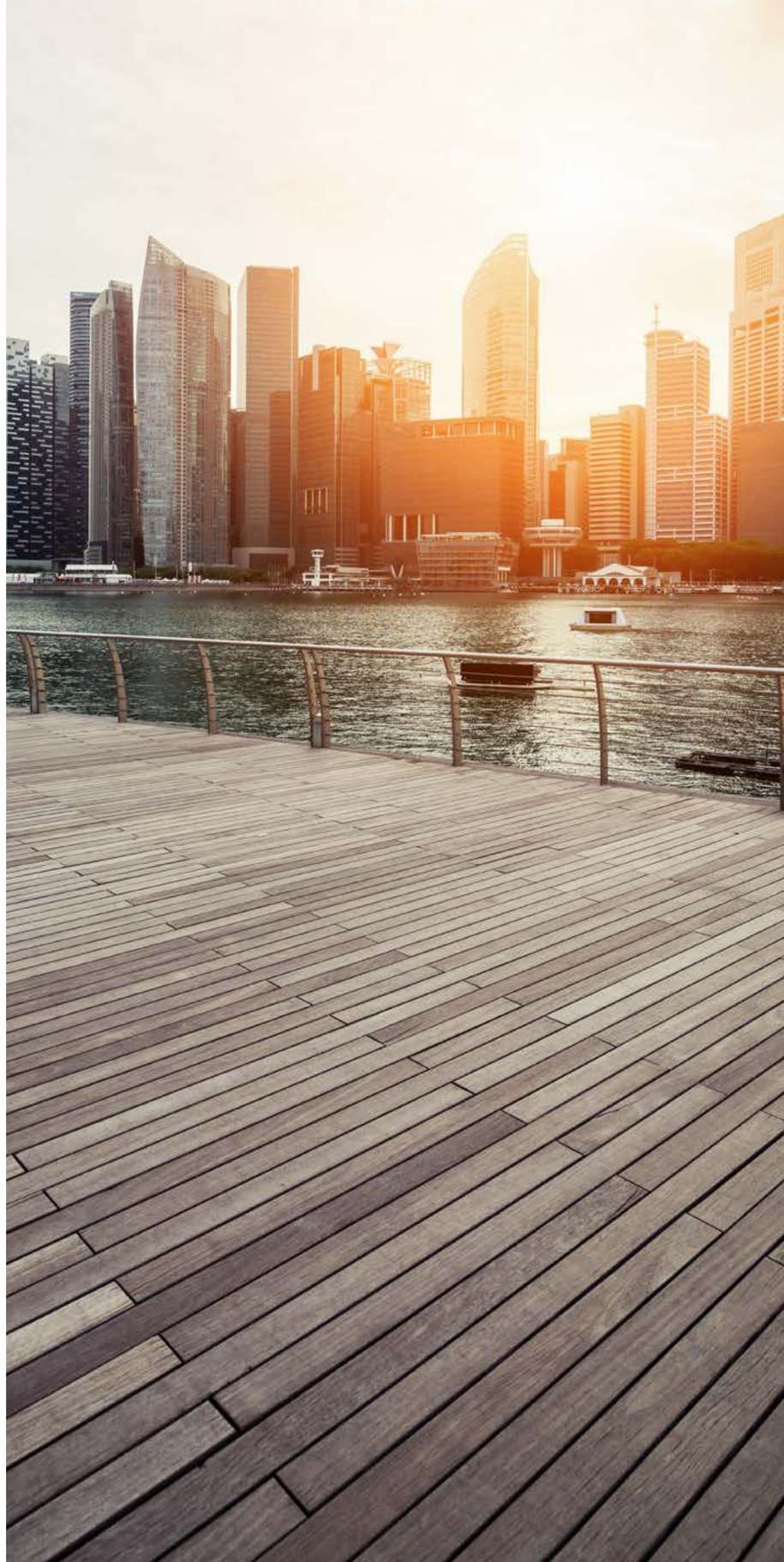

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