



SMART BUILDING

# ABB i-bus<sup>®</sup> KNX

An intelligent investment  
in the future

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STORAGE

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SMART BUILDING

Far-sightedness with system. Those who invest in building systems technology today must rely on it being up to date tomorrow and further into the future. This is precisely what the technology of ABB is made for – a continually developing world. That is why we rely on the international KNX standard and provide numerous applications that always offer a complete solution.



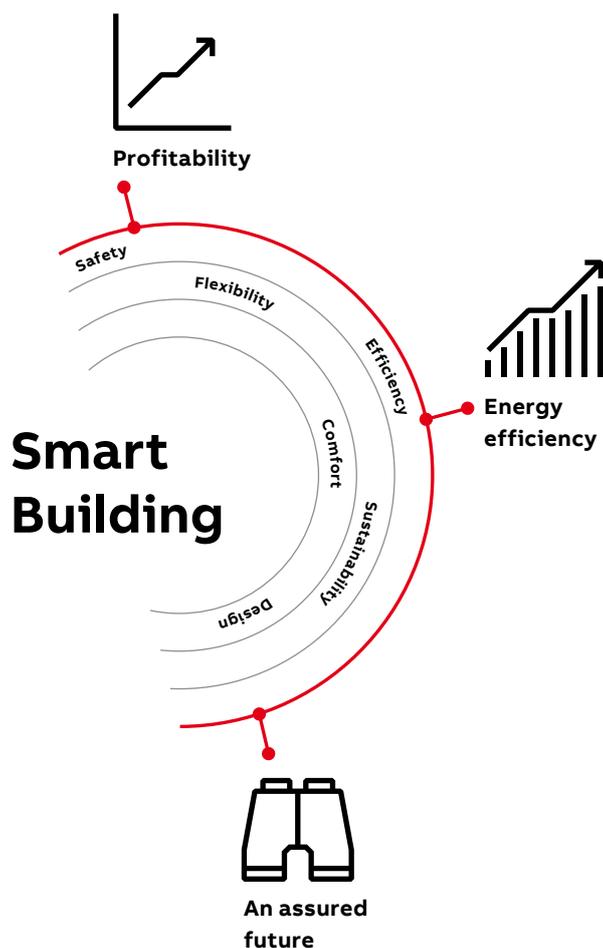
# Smart investments

## For the entire potential of the building

Many factors increase the economic efficiency. New materials and architectural concepts as well as regenerative energies create new possibilities.

Yet to utilise all these factors requires future-oriented building systems technology. An intelligent control system for everything – enhancing productivity and creativity, and increasing comfort while saving energy. The electrical installation is the nerve centre of the building and contributes much more than merely the necessary power – it controls the success.

Intelligent building systems technology that is based on ABB i-bus® KNX means the building remains up to date and profitable. The amortisation period is reduced and significant savings are created over the entire life cycle, planning stage and construction phase, and during selling, leasing and operation.



### More room for perfection

The intelligent building systems technology utilises the entire potential of flexibility, safety, comfort and efficiency. With a total solution that takes all details into consideration, and fully meets the wishes of buyers, lessees and operators. Here, all functions in rooms are adapted to the individual needs and purposes of use. All loads are controlled in an energy-efficient manner and tailored to suit requirements, with the utmost regard for people and building safety.



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01 Each building becomes liveable, with intelligent control of light, shading, room climate and safety. Efficiency that is really pleasant.



ABB plays a leading role in the KNX association and with ABB i-bus® KNX relies successfully on the international KNX standard. This makes the fully developed top technology useful globally and it integrates itself perfectly into all current architectural and utilisation concepts. The thinking of ABB's 135,000 employees in 100 countries throughout the world is typically future-oriented. All work unitedly on the future of intelligent buildings.

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## KNX with ABB

# The complete solution from a single source

The intelligent building automation is to accomplish everything, from the reliable distribution of medium and low voltage, up to the control of loads according to requirements.



Only a full service provider can unite all the individual requirements into a fully functioning whole. This is the approach of ABB: Everything unites for increased comfort, efficiency, safety and sustainability, as well as a trends setting design. The investment is future-oriented, together with the entire professional service. A global company is and remains the reliable partner.

### **Design with total entitlement**

A modern office building is founded on countless technical details. Perfect interaction, both between technology and people, is the basis for efficiency. In addition, the shape of the technology is no less important. The presence detector is to be designed as perfectly as the light sensor in the room, and a room air sensor should be as easy to operate as the air is clear.



What is the advantage of investing in KNX? Each new technology gives rise to many questions. The first is: Is it worth the effort? The answer is twofold. Yes, the KNX standard makes planning, setup and operation more efficient. And the second yes, it raises the value of a building because something is added to the improved technical efficiency. Smart building systems technology provides people with an ideal environment for greater motivation and productivity.



# Added value with KNX

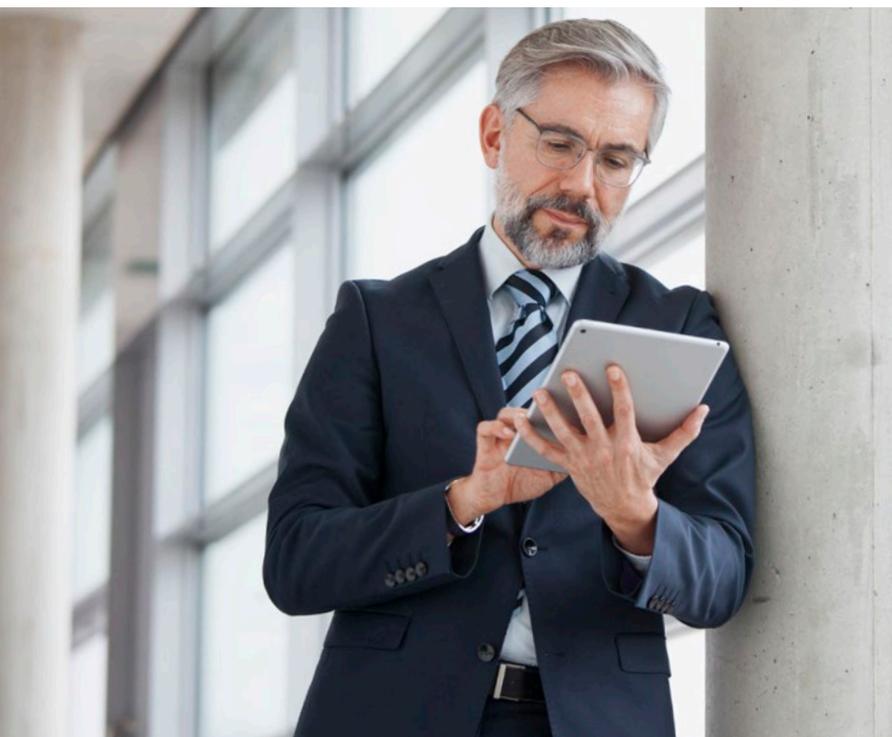
## The more intelligent system

The only open global standard for building systems technology accomplishes more.

KNX creates the highest possible protection of investment and flexibility. It allows for the largest variety of options, and controls and automates the essential applications of a building. The entire capability to perform can be immediately felt by everyone, in matters of safety, heating, ventilation, air conditioning, lights and shading. A new level of efficiency is created for lessees, users and proprietors. All in an attractive piece of real estate.

### Advantages for everyone

The integrated system demonstrates its strength even before it is operated: It reduces the effort required in planning, installation and cabling. The system can be extended almost limitlessly throughout its entire service life. New functions can be integrated at all times. The intelligent automation reduces energy costs, such as through the control of light and heating during absence, and the environment is protected at the same time. Operational management and monitoring is simpler and cares both for reduced operating costs and efficient facility management. This not only raises the comfort for lessees and buyers, but also the value of the building. Safety in every regard.



## KNX

- KNX is a global standard
- Conforms to standards: EN 50090, EN 13321-1, ISO/IEC 14543, GB/T 20965, US Standard ANSI/ASHRAE 135
- More than 48,000 KNX partners in 141 countries
- A system with increasing acceptance

## The best investment

In every situation and at all times



### Energy efficiency

The intelligent and networked control minimises the consumption of energy while functioning perfectly – ideal for light, shading, heating, ventilation and air conditioning.



### Comfort

The technology shapes the environment according to personal wishes. Today only a few movements of the finger are required to adjust all the factors for one's wellbeing.



### Economic efficiency

Good figures have reasons: energy-saving automation, intelligent control, individual adaptation, and control and planning with a clear overview.



### Reliability

The system does not fail if one has a clear overview of all values and one can respond immediately when necessary. Monitoring and maintenance are simplified noticeably.



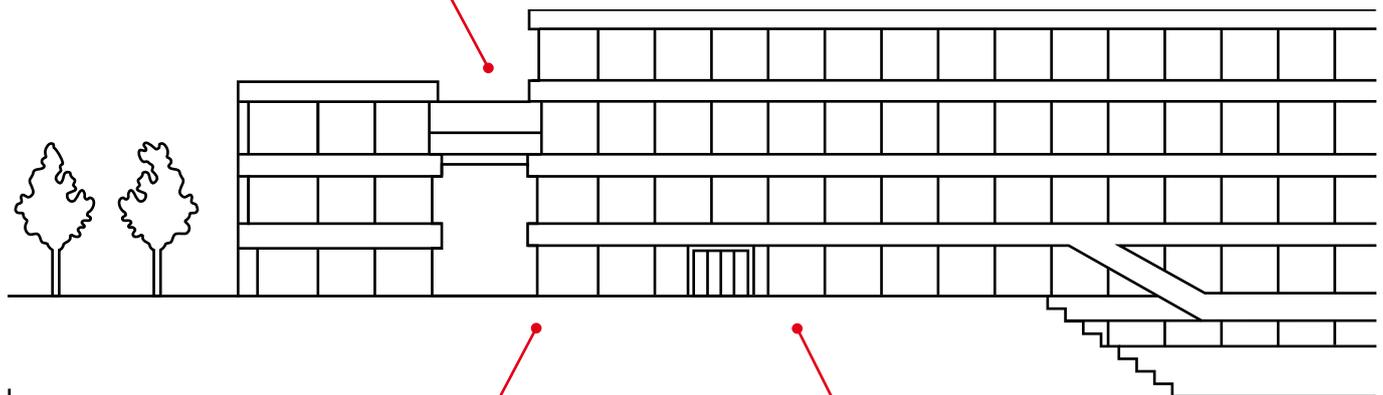
### Flexibility

The functions of the building change during the course of decades. The bus system always remains flexible: everything that is necessary can be extended and reprogrammed at all times.



### Safety

A lot can happen in a building. ABB i-bus® does everything to protect the people in it, to be rescued during an emergency, and the property retains its value.



### Improving economic efficiency

ABB i-bus® KNX influences many ecological factors. It is easy to save energy with intelligent control. Whether it is with the control of individual rooms with regard to heating, ventilation and air conditioning, with the illumination according to requirement, or with the control of blinds for the utilisation of daylight and sunlight. Additionally, the facility management optimises the consumption of energy with a comprehensive recording of operating data, which can be clearly visualised.

### Increasing energy efficiency

The technology can do much for the protection of the climate: The intelligent building systems technology utilises the entire potential for optimisation, especially with regard to energy-intensive illumination and shading as well as for heating and ventilation. Here, ABB i-bus® KNX systems connect the economic consumption control with the actual demands on comfort. This comprehensively raises the attractiveness of private and functional buildings.

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# A system with variety

## For a demanding world

Each building is there to serve people. The demands made on the social and technical surroundings are greater than ever before.



And here the intelligent building systems technology from ABB exhibits its entire strength. The KNX technology offers the best possible system flexibility and functionality for each concept and every type of building. The products from ABB cover all essential building applications and include even the future; the real value of real estate is seen in what is created within it.

### More comfort

The surroundings adjust to the requirements: with the subjective correct temperature, the pleasant illumination or the correct CO<sub>2</sub> value. The entirety is created with the most simple operation. Recurrent tasks are efficiently automated thanks to KNX: the light depending on presence, and the blinds according to the weather.



### Greater flexibility

The spatial arrangement of a building changes quite often during the course of the decades. With ABB i-bus® KNX, the functions of the building are adapted to the respective new uses – easily and cost-effectively. Reprogramming or extensions are implemented fast and easy at all times. This extends the scope already during the planning phase.

### More safety

The system integrates all relevant safety functions with detectors for burglary, fire and smoke, technical alarms, panic and emergency-call functions, automatic illumination and a realistic presence simulation. The people in the building are well protected, both with a sensitive and an intelligent control system. And the building itself retains its permanent value.

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## Lasting values

# Through the entire lifetime of a building

The entire potential of the building is utilised. One can trust the return of the investment already during the planning and construction phase: ABB i-bus® KNX creates the basis for long-term cost savings. The technology and comfort have excited for many years, the figures tell the story: a profitable system.



- High protection of investment
- Fast amortisation
- Noticeable reduction of operating costs
- Profitable resale

### Forward-looking during planning

Even if the expenses for ABB i-bus® KNX during the construction phase lie above those of a conventional installation, they are lower throughout the entire life cycle. The far higher functionality pays for itself during planning, which can be organised with flexibility and time savings. Less effort is required for the installation, and commissioning is more efficient. Especially during operation, running costs of up to a two-digit percentage can be saved. Permanently impressive.



#### **Cost saving during operation**

Studies prove that the use of intelligent building systems technology can result in high energy savings: up to 35% for electrical illumination energy due to constant light control, presence detection and intelligent shading, and up to 25% for heating energy. As well as 45% of the electrical cooling energy due to functions such as individual room control, presence detection and sun protection. The transparent recording of operating data and processing of error messages reduces the costs for facility management and maintenance.

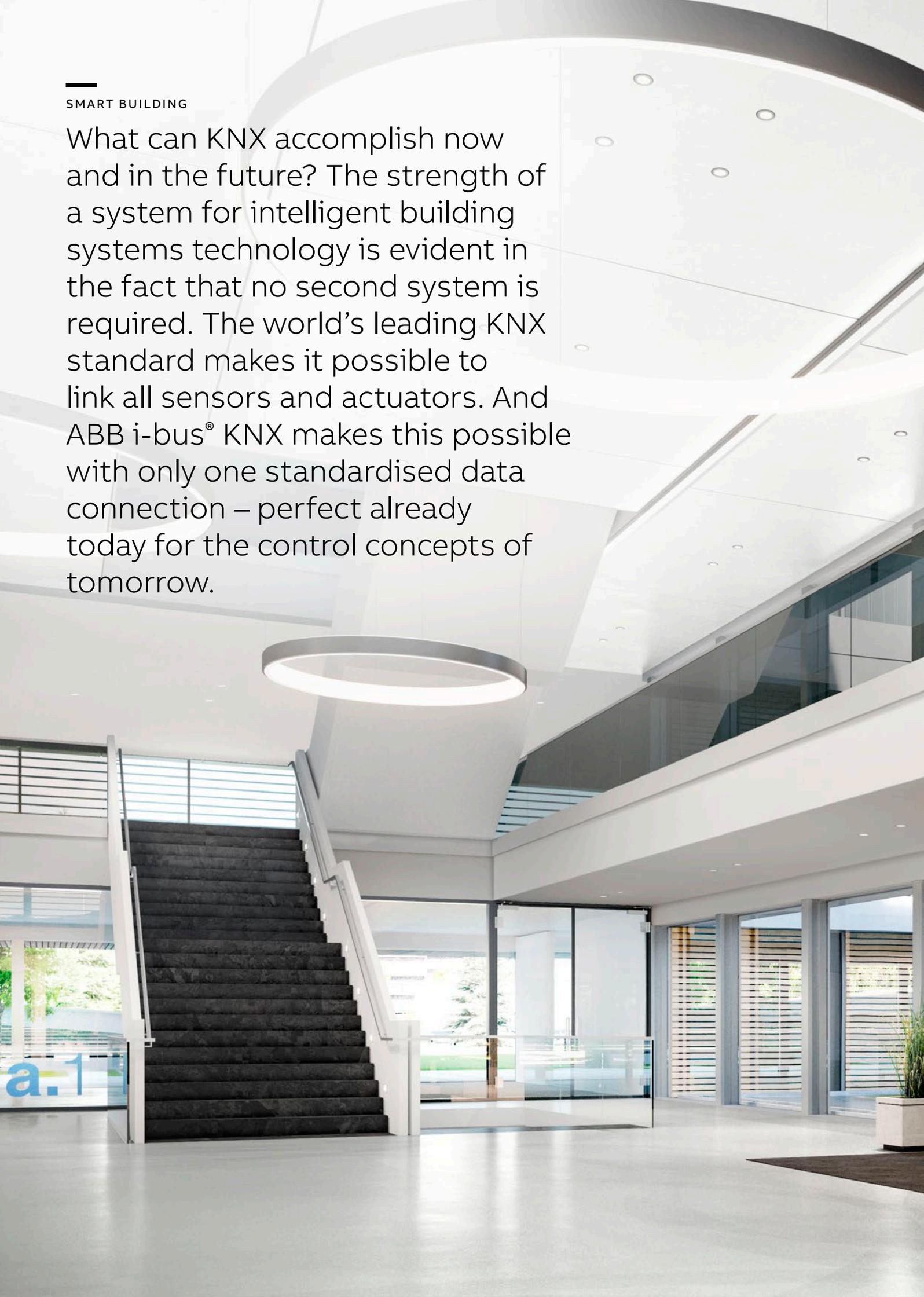
#### **Retention of value for selling and leasing**

A building equipped with ABB i-bus® KNX has a clear competitive advantage in that the profitability increases due to the increased attractiveness and the associated higher market value of the object. The quality of the equipment is always a positive factor. The life cycle of the building is lengthened, and with it the profitable phase. Whenever the property is resold or leased, even after many years, it has a future and a value for investors and users.

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SMART BUILDING

What can KNX accomplish now and in the future? The strength of a system for intelligent building systems technology is evident in the fact that no second system is required. The world's leading KNX standard makes it possible to link all sensors and actuators. And ABB i-bus® KNX makes this possible with only one standardised data connection – perfect already today for the control concepts of tomorrow.





**BUILDING SPACE® | OFFICE**

# Consistent networking

## More intelligence for all applications

Those who expect more can also get more. ABB i-bus® KNX becomes useful for lessees and operators immediately. Here, the building applications such as heating and illumination are integrated into a networked system.



This avoids the complex and cost-intensive entirety of many individual solutions. KNX does it better because building systems technology networks trade-spanning functions and thus offers maximum flexibility for the future.

### Personalised illumination

Light can generate more energy in people with the use of less energy. And that is precisely why the smart presence detectors, the Busch-Watchdogs, control the illumination according to the desired effect. The overview together with the settings of all parameters is provided by the multifunctional Busch-ComfortTouch®. Complex scenes can be controlled with the tip of the finger.

### Perfect connection with everything

With ABB i-bus® KNX, all devices communicate with each other via one bus line, which is installed in addition to the normal power line. This connects all electrical functions via the “bus system”. This type of networking is useful not only for the efficiency in large functional buildings – also a single residential unit gains in comfort and cosiness.

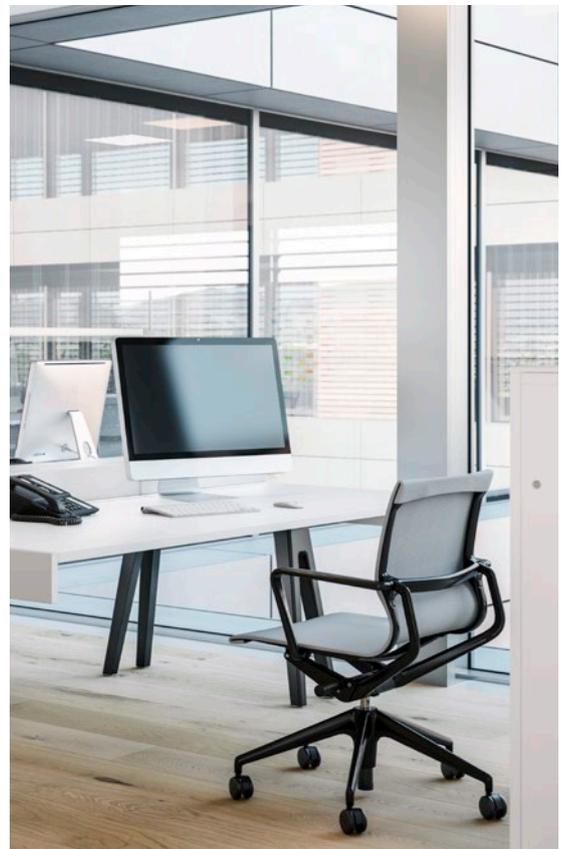


### Complete heating, ventilation, air conditioning

The proverbial climate at the workplace or at home has many causes. The technical factors can be set as perfectly as possible. Is the warmth of heating too high? Is the room well ventilated? Is the air conditioning pleasant? Is the CO<sub>2</sub> content correct? All this can be controlled with compact displays and easy-to-operate rockers in the design of the desired switch range.

### Light and shade of the highest efficiency

The major source of energy is the sun. However, its power can also be disturbing, and that is why it should be fed into the building in the right doses. Sensors at different points in the building care for the perfect coordination of all factors: heat and light are adjusted automatically, the blinds respond to the position of the sun, everything is controlled harmoniously. Efficiency with a clear head.



### Transparent energy management

Recording, evaluating energy consumption, including and managing one's own production of energy: the energy efficiency concepts that are based on ABB i-bus® KNX use every available potential. This includes data such as current values, consumption statistics or details for the feed-in of the wind or solar supply system. Everything is clearly displayed on your mobile, tablet, PC or Busch-ComfortTouch®.



**Safety and comfort connected**

ABB safe&smart combines two previously separate systems: reliable alarm technology with comfortable building systems technology. Thanks to smart networking, for example, just a single window contact for two functions is necessary to control the air conditioning system and signal a burglary. With the comprehensive KNX danger-signalling unit and the clearly structured operating devices, everything is perfectly under control – professional alarm technology and perfect integration into the world of intelligent system technology.

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SMART BUILDING

ABB i-bus® KNX impresses with every application. And here ABB i-bus® KNX proves itself as a superior system; the technology not only adapts itself perfectly to its use, but also increases its value. This provides the best conditions for selling a property or profitably leasing it. The KNX standard, with an assured future, creates the basis for success.





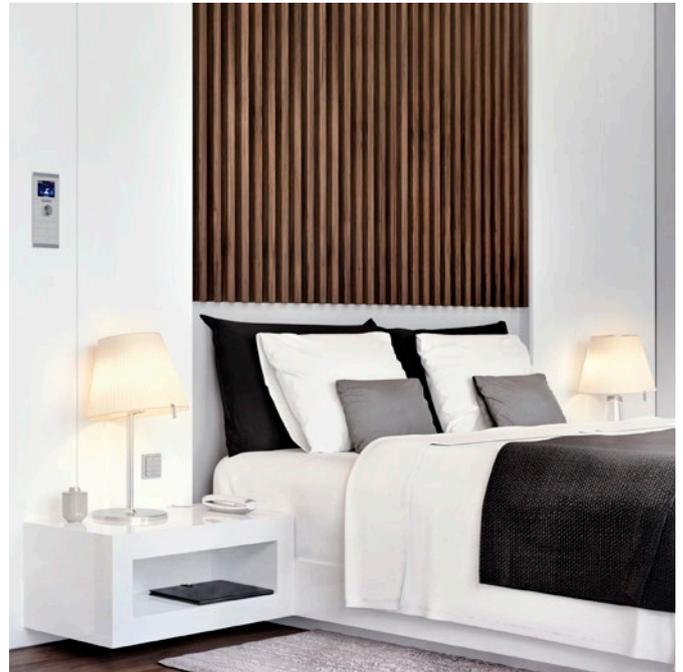
BUILDING SPACE OFFICES

## Hotels

### More comfort through technology

Every hotel guest has high expectations. Those who fulfil them increase their profit. Only performance counts. Is the room comfort up to date? Are the furnishings modern? Is the overnight stay an adventure? ABB i-bus® KNX has a direct influence on well-being and improves the technical and economic processes during the daily management.

Energy efficiency	
Flexibility	
Comfort	
Safety	



#### Technologically the number one address

Saving energy while, at the same time, increasing the comfort, that is definitely possible with ABB i-bus® KNX. For example, the intelligent tailor-made control of the room climate is both more economical and more comfortable. The guests will appreciate this, also the management, because the networked system provides transparency with regard to the technology for rooms and systems. If errors occur, they can be quickly rectified. This results in the best balance sheet figures for operators and investors.

## Office buildings

Greater productivity with system

The intelligent building systems technology revolutionises the working environment. It makes the productive surroundings more pleasant. The efficiency increases automatically. ABB i-bus® KNX cares for optimum shading, pleasant room climate and much more. The technology increases the options of the entire interior design – for a working atmosphere of a totally new quality.

Energy efficiency	
Flexibility	
Comfort	
Safety	



### Definitely more efficiency

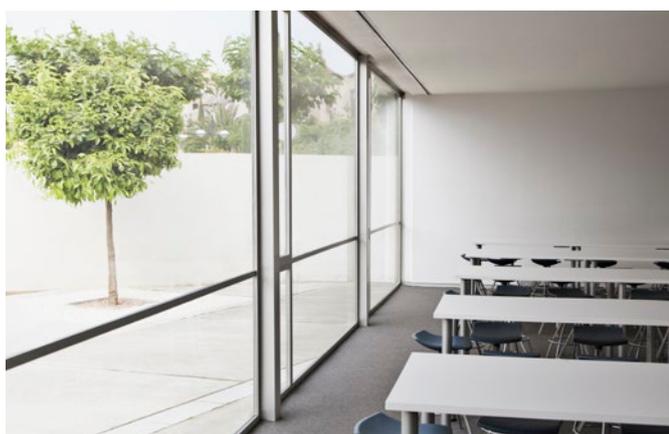
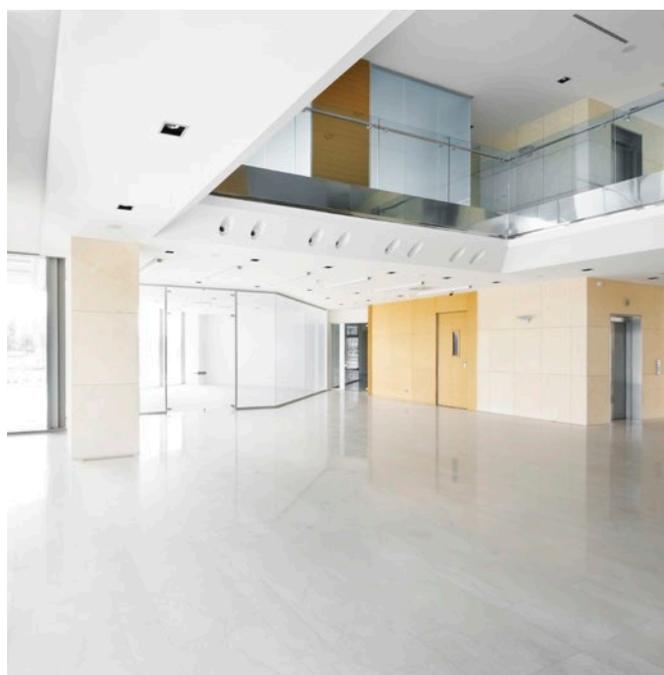
The energy costs of illumination and room air conditioning can be drastically reduced. They have the largest share in the total energy consumption of the office building. With ABB i-bus® KNX, the energy savings can reach a double-digit percentage figure – a significantly high value for all practical applications. This proves that the KNX technology raises the efficiency of every office building. This creates a deciding competitive advantage for lessors and investors – attractive spaces assert themselves best on the market.

## Schools and universities

Excellent investment for education

In every school and university there is much that needs to interact perfectly. Each day presents new challenges. The comprehensive options for automation of ABB i-bus® KNX provide the highest efficiency in building control. The invisible, perfect technology cares for productive lessons and a creative environment for all those who will change the world of tomorrow.

Energy efficiency	
Flexibility	
Comfort	
Safety	



### Constant growth in knowledge

Educational centres operate within a very tight budget. The ideal solution is tailored to the requirements of illumination, shading, heating and ventilation. It leads to significant savings in operating costs and protects the environment. Monitoring and safety functions are particularly sensitive in public areas and are systematically networked, thanks to ABB i-bus® KNX.

## Hospitals

Health also for the balance sheet

Nowhere are the demands made on the reliability, safety and economic efficiency of the electrical infrastructure higher than in hospitals. Here, ABB i-bus® KNX relies on a combination of proven technologies, permanent transparent monitoring and safe processing of error messages. Systematically sensitive.

Energy efficiency	
Flexibility	
Comfort	
Safety	



### Faster recuperation

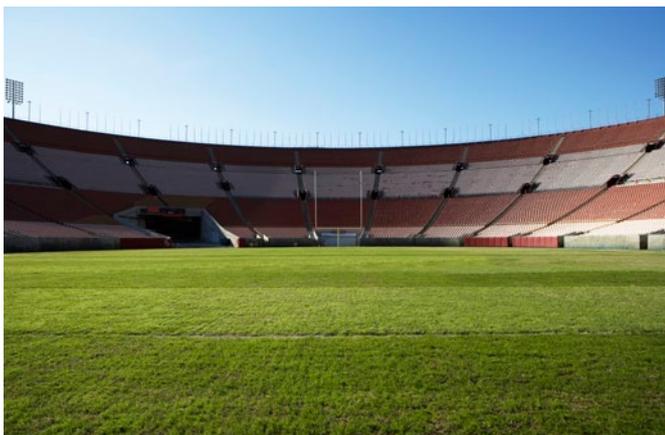
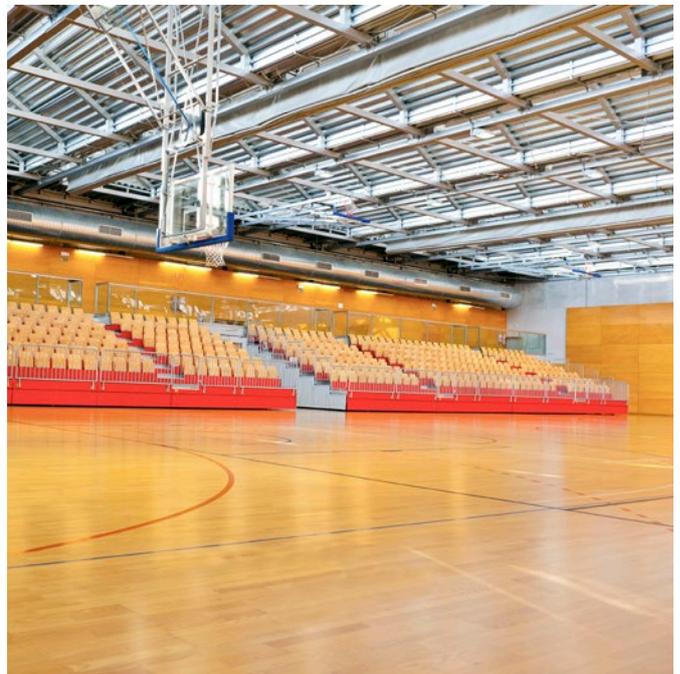
The planning and creation phase of hospitals is characterised by countless details. ABB i-bus® KNX assists in designing the processes of such demanding projects efficiently. The flexible system also assists in completing the buildings to deadlines. Cost management is permanently improved during daily operation and the consumption of energy is reduced – providing efficiency for all buildings in the health sector where every second counts.

## Sports facilities and stadiums

Successful in every sector

The attraction for the audience of today is an arena that can accommodate all types of events. The demands on the electrical installation system have increased greatly. Every event is different, and here the building automation with ABB i-bus® KNX has a flexible solution. The show must go on.

Energy efficiency	
Flexibility	
Comfort	
Safety	



### Always in the best light

Even the most complex illumination is easy to operate by means of pre-programmed light scenes and automatic sequences. The functions impress visibly. Also important is the reliable work being performed in the background. ABB i-bus® KNX processes error messages, displays current consumption values, signals when limit values are exceeded and assists in managing the building optimally and safely. This turns every event into an adventure – and a success for the operator.

## Residential buildings

Technology for quality of life

The technical equipment of apartments and villas increases their attractiveness. Here, ABB i-bus® KNX combines functionality with timeless and aesthetic design. This allows a new quality of living to be experienced with all the senses. Real values that count when selling or leasing.

Energy efficiency	
Flexibility	
Comfort	
Safety	



### Always suitable to one's lifestyle

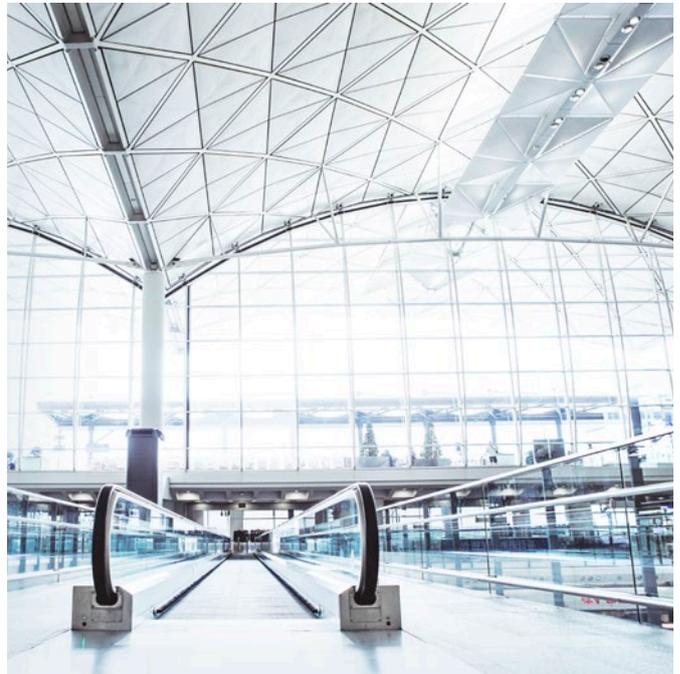
The desire for individual living space starts with the student apartment and goes up to the luxury villa. With ABB i-bus® KNX, every living environment with all its functions can be designed with greater value, with the modern integration of audio/video and Internet. Comfort and quality of life are the deciding factors. This results in higher rental returns and selling prices. A win-win situation for residents, operators and investors.

# Airports

With increasing success

ABB i-bus® KNX proves its perfection in all airport buildings around the clock. Travellers know how to value pleasant illumination, shading and air conditioning. This also allows airport personnel to manage the highest passenger traffic.

Energy efficiency	
Flexibility	
Comfort	
Safety	



### All details under control

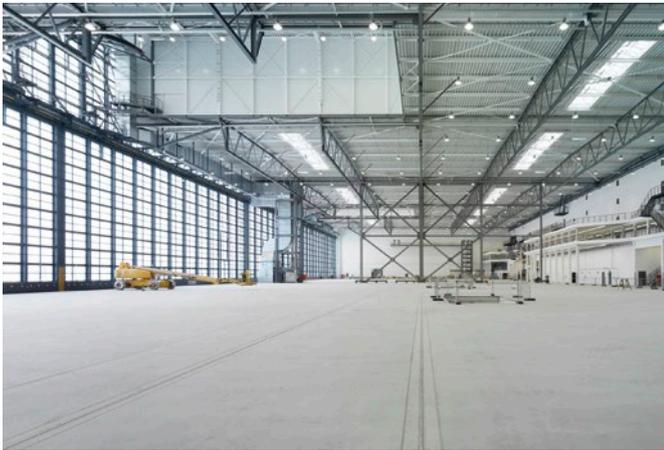
To monitor the entire electrical system in all airport buildings has become much easier. The consumption of energy with all its causes, and all automatic control systems, everything is under control. Here, the use of a system is shown to advantage: ABB i-bus® KNX is a compatible system that smoothly integrates itself into the respective IT environment. With high transparency and minimal infrastructural costs.

## Industrial buildings

With maximum increase in value

Complex and expensive production plants are better protected by ABB i-bus® KNX. Already the right workplace illumination and fast signalling of errors in the operation of the building prevent downtimes, improve processes and raise the quality.

Energy efficiency	
Flexibility	
Comfort	
Safety	



### More efficiency and safety

Also the functions for the largest production systems are now easier to control, because ABB i-bus® KNX can be integrated into the IT network. Status and error messages can be visualised clearly at the operating stations. A big step to simpler facility management. To equip a building with KNX also improves the stability of production. This secures the investment in the system – with a system that generates values.

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