



COMMERCIAL REAL ESTATE

# Optimizing buildings with technology





# The evolution of commercial buildings

In the early days of commercial buildings, the focus was primarily on providing practical spaces for businesses to operate. However, the expectations of commercial real estate have fundamentally shifted in today's competitive market. Commercial buildings face several challenges, ranging from the imperative for energy efficiency and sustainability to the need to integrate smart technologies. Developers must carefully consider how these buildings will be operated, whether as single-tenanted sites or mixed-use developments. Additionally, the post-pandemic era has emphasized the importance of health and wellness, recognizing that staff well-being directly impacts productivity.

To succeed in this dynamic landscape, developers must adopt an approach that seamlessly integrates technology and sustainability into commercial building design, facilitating well-being, flexible workspaces, and regulatory compliance. By addressing these challenges effectively, commercial buildings can enhance operational efficiency, reduce energy consumption, and ultimately provide a superior experience for occupants.

# Making buildings smart

Commercial real estate is embracing transformational technologies such as AI, machine learning, IoT devices, and data analytics. These innovations influence how properties are developed, managed, and marketed. Network cameras combined with intelligent analytics can be used as sensors to meet the evolving needs of commercial buildings.

In this brochure, you will be able to see through use cases and illustrations how a full network solution from video, access, audio, and analytics keeps your building and your tenants secure and safe. It also makes your building operate smoothly, smarter, and more cost-effective. By using dashboards to understand how your building is used, you can gain insights to make smart decisions every day on how to manage your building effectively.



## **Factors shaping the evolution of commercial buildings:**

- Transformational technologies
- Hybrid workspaces
- Shifts in societal and environmental priorities

# Products for smart buildings

An Axis network solution is made up of IP-based devices that can vary, depending on your needs and goals. Here, you can see some of the key elements that are relevant to making buildings smart.

## An Axis network solution includes:

- IP-based devices
- Video management system
- Analytics to collect and analyze data



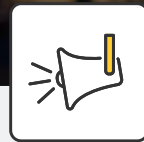
### Visual cameras

Axis has a variety of models of visual cameras to suit a wide range of use cases and mounting needs, for example, PTZ, fixed box, dome, and modular cameras. Sophisticated algorithms and technologies like Axis Lightfinder, wide dynamic range, and electronic image stabilization help ensure forensic image quality even in challenging conditions.



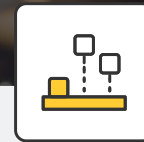
### Access control

Access control solutions help you ensure that people and vehicles only gain entrance where they are authorized to be. They can be applied at the front gates, on specific buildings or rooms, or even on a server cabinet. You can also integrate them with other systems and network devices. For example, you might configure your system so that a specific door is not accessible during a certain part of the production process, or unless employees are wearing proper personal protective equipment.



### Audio solutions

Audio solutions, such as horn speakers with built-in two-way audio, can be integrated with video so that specific events trigger relevant messages. For example, when intruders are detected on camera, you can send an audio warning to them using the nearest horn speaker. Or you can automate instructions to staff during an unexpected production stop. An Axis audio system can also be used to manage live messages including paging, urgent updates, and other public address needs.



### Intelligent analytics

The right analytics can turn visual cameras into sensors, which you can use to detect specific objects, complete quality assurance tasks, inspect processes, and much more. By combining intelligent features and analytics with direct notifications, network cameras can also make it possible to automate responses and enable you to alert the right personnel, on-site or off, to take further action. Using cameras as sensors lets you visually verify whether there are too many people in a given area and override the VMS if you choose.



### Thermal cameras and radar technology

When it comes to security, thermal cameras, and radar together are a powerful, cost-effective alternative to radio frequency intruder detection, electrical fences, floodlights, long-range sensors, and microwave and infrared barriers. They accurately detect people, objects, and incidents in complete darkness, strong sunlight, fog, smoke, or dust.

[Watch a video about solutions for Commercial Real Estate](#)

# From entry to exit and everything in between

Our solutions for commercial real estate improve security, safety, and operational efficiency, from the parking lot to reception, in hallways, stairwells, common areas, and even in restricted areas.



## Parking lots

Security, safety, and efficiency start in the parking area when occupants can enter and exit safely and in an orderly fashion with little or no human intervention. Network door controllers and license plate recognition let you control who enters and when, so you can maintain a safe environment, avoid overcrowding, and respond to illegal parking.

Cameras, radar, and thermal equipment fitted with intelligent analytics alert you to suspicious behavior and emergencies, and let you visually confirm what's happening and respond in an appropriate and timely manner.



### USE CASE

Control vehicle access

### Challenge

It's not easy to keep track of what vehicles enter your parking lots and if they are authorized to do so. For known vehicles, you want entry and exit to be as smooth as possible.

### Solution

Use license plate recognition (LPR) technology to manage access control in your parking lot. AXIS License Plater Verifier is an application that can come preinstalled as part of a kit or be installed onto compatible cameras. This is a simple and easy-to-use application for access control on vehicle barriers, allowing you to set up allow/block lists to choose who can and cannot enter your parking area.



### USE CASE

Detect sounds of aggression

### Challenge

Sometimes incidents happen at nighttime or outside a camera's field of view.

### Solution

Discover the sounds of aggressive behavior that may happen on your premises. Axis video surveillance cameras and speakers equipped with partner sound detection analytics can identify breaking glass, aggression, gunshots, etc. When identifying noise aggression, an alert is triggered which enables you to respond immediately before damage to people and assets happens.

## Reception or lobby

Your reception area, lobby, or entrance hall is the next stop in a secure, safe, and pleasant visit – and key to a good impression. Making guests feel welcome and maintaining a secure environment starts with a door controller or our 2N door intercom with integrated access control and built-in IP cameras, which adds visual verification to automated access control.

Here, cameras with intelligent analytics can alert you to loiterers and people approaching restricted areas or acting aggressively. You can intervene over an intercom or send a guard if a visual assessment of the situation warrants it.



### USE CASE

Verify entry for staff and visitors

### Challenge

For employees, temporary staff, and visitors, it would be helpful to match access to physical spaces to each person's role, location, time of work, and permissions to reduce the risk to digital and physical assets.

### Solution

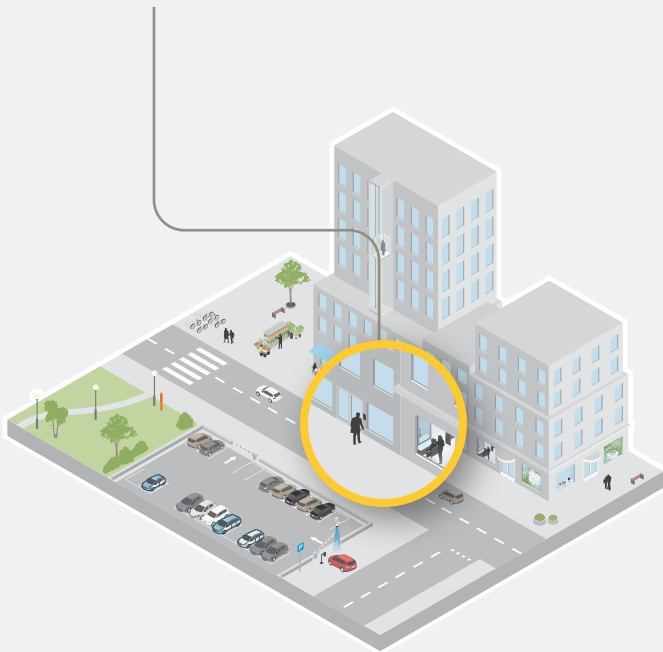
We have access control solutions that allow authorized individuals to enter and exit based on various kinds of credentials. An example is our barcode reader which supports QR codes for easy, temporary access. Other types of authorizations include Bluetooth, cards, key fobs, and facial detection or biometric readers with partner solutions. Access rules such as anti-passback can be applied to prevent multiple people from using the same access card. Network intercoms with high-quality video and audio can be used as an additional layer of authorization.

### People access

All Axis access control solutions are IP-based solutions that are scalable and edge-based, with single-door and multi-door support. Our solutions include:

- Traditional access control systems (e.g. cards and key fobs)
- QR codes for temporary, easy access
- Bluetooth – touchless access or at the press of a button
- 2N intercom – video and audio for remote entry control
- Facial detection and biometric readers with partner solutions
- Visitor management system

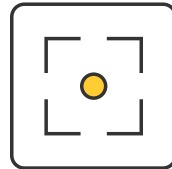
Read more about [access control](#) and [network intercoms](#)



## Common areas, cafés, kiosks and office space



Beyond your lobby or reception area are common spaces, for example, shared work areas, exercise rooms, as well as office space, and businesses like restaurants, cafes, and kiosks. Transforming video from already installed cameras in common areas gives valuable insights. With AI-based analytics you can detect, classify, track, and count objects, it gives easy access to actionable insights, so you can make more informed decisions. Thanks to AI-based classification, you can focus only on objects of interest and events that need attention, making your monitoring more effective.



### USE CASE

Count the people in your building

### Challenge

It's hard to keep track of how many people visit your building at different times of the day, week, or month.

### Solution

With AXIS Object Analytics you can gain an understanding of how many people visit your building on average at different times of the day. This can allow you to staff stores and restaurants appropriately. You can also accurately track exactly how many people are in the building at any given moment.



## Common areas, cafés, kiosks and office space



A greater focus on health, sustainability, and productivity, means that the need for optimal indoor environments in commercial spaces has never been more critical. Indoor air quality (IAQ) plays a major role in the well-being of employees and visitors, impacting everything from health to performance. Indoor air quality sensors are becoming an essential part of solutions to monitor and improve air quality in smart commercial buildings.

### USE CASE

Check indoor air quality

### Challenge

The quality of the air we breathe significantly impacts our health, productivity, and overall well-being. In spaces, where employees and visitors often spend many of their waking hours, poor air quality, often also referred to as Indoor Air Pollution (IAP) – can lead to a range of problems as health issues and reduces productivity.

### Solution

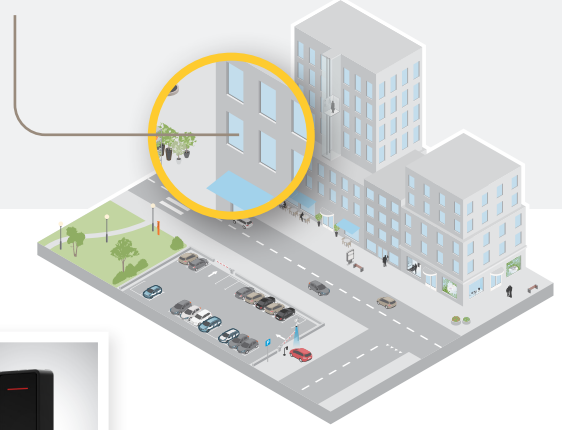
By incorporating IAQ sensors into commercial buildings, owners and managers can ensure that their spaces are healthy, comfortable, and in compliance with evolving regulations. IAQ sensors can help optimize HVAC systems by adjusting airflow based on real-time conditions, they help with energy efficiency, enhancing sustainability efforts and much more.





# Restricted areas

You can keep unauthorized individuals from entering – or even approaching – restricted areas like server rooms, delivery areas, and waste areas with Axis door controllers. Our door controllers also help you keep track of which authorized individuals have entered restricted areas and when, information which can be useful for investigations if something unexpected takes place. Our cameras with AXIS Object Analytics can help protect restricted areas by giving you alerts for scenarios such as time-in-area, line-crossing detection, and direction monitoring. AXIS Object Analytics comes preinstalled on compatible Axis cameras.



**USE CASE** Protect areas with access rules

### Challenge

Make sure only authorized people enter restricted areas.

### Solution

A two-person access rule can be applied to the door controllers in restricted areas. This means that two people need to scan their cards to enter, which adds an extra layer of security.

# Optimize your building through insights

Cameras working as sensors can help you make informed decisions to run your building in optimal ways. Because Axis devices and analytics are built on open standards, they can be integrated with other systems for multiple purposes such as occupancy monitoring, heating, ventilation, air conditioning, smart lighting, building energy management and energy storage, water, elevators, fire systems, facilities management, security, and building automation systems.



## Occupancy levels

With the rise of remote work, many commercial property owners find themselves in charge of open, empty spaces. To optimize businesses and operations, it's helpful to monitor occupancy levels. Through a partner solution, Axis installed cameras working as sensors can provide metadata to dashboards. These can visualize, for example, building occupancy levels in various areas, the number of visitors, meeting room usage, and seat usage. You can easily identify overcrowded meeting rooms or underutilized spaces and take action.

## HVAC integration

Heating, ventilation, and air conditioning (HVAC) can be automatically adjusted according to building occupancy levels. Analytics that monitor the number of people in a reception area can also trigger automatic adjustments in your heating or cooling system that save you money while keeping visitors to your premises comfortable. Also, if you see that your building is only occupied by 5%, it may be an opportunity to reduce or turn off the heating.

## Lighting integration

It's possible to adjust lighting according to your building's occupancy. When integrating cameras as sensors and network access control with lighting in your building management system, you can save money, as lights can turn off when no one is present. The connection between devices can be handled through I/O connectivity using Z-Wave Plus® which automatically turns on or off lights. As the Z-wave information is sent to your VMS, you always know what's happening.

## Time and attendance

With Axis access control solutions, you can gain insights into the time and attendance of the people in your building. This data is sent as metadata to dashboards that show, for example, how long people stay in different rooms and during what times. This data can be determined on an individual level, thanks to our access control solutions that include wireless access, Bluetooth readers, QR codes, cards, fobs, or face detection in partner solutions.

# Smart space planning

AstraZeneca is a multinational biopharmaceutical company that prides itself on its ground-breaking development of life-changing medicines for millions of patients around the world. This AstraZeneca site is at the Gaithersburg, Maryland campus outside of Washington, DC.

## Challenge

After years of service, it became apparent that the security camera system monitoring the site's 10 buildings wasn't keeping pace with the needs of Gaithersburg's innovative work environment. Their existing security camera solution was holding them back from implementing new ways to support the 1.4 million square feet of office space, laboratories, and manufacturing facilities more effectively.

## Solution

A mix of over 500 Axis cameras were deployed throughout the campus. To understand how people were using their assigned space, AXIS 3D People Counter was deployed, equipped with analytics, at circular verticals (elevators/stairwells) and chokepoints on each floor of the building to determine how many people were occupying each area.

## Result

Changing over to Axis cameras and AXIS Camera Station truly transformed the way the security department supports the Gaithersburg campus. One of the goals of this project was to help facilities management identify space that wasn't being used and evaluate the real space needed so that offices and equipment could be reallocated and used more cost-efficiently. The changeover has enabled them to address space planning for their offices and laboratories, but also issues like sustainability, troubleshooting processes, quality assurance reviews, and how security oversees emergency evacuation drills. Axis technology has had a direct impact on daily operations and future decisions.

[Read the full story](#)

# Sustainability in the spotlight

Founded in 1967, PAE is an engineering firm that serves public and private sector clients throughout the western United States and beyond. The company is leading the way in sustainable engineering design.

## Challenge

When PAE began designing its new Portland, Oregon headquarters, they wanted the new building to reflect their commitment to sustainability. They searched for a surveillance solution that was as minimal as possible, without compromising the security of their building and the safety of their employees and tenants. PAE wanted to use the fewest number of cameras they could, to get the views they needed for security purposes. Another project goal was to minimize the energy requirements for access control.

## Solution

Axis multi-sensor cameras were chosen to keep camera counts, cabling, and energy consumption low while delivering a high level of awareness about activity in and around the property. For access control, PAE opted for a POE-powered lock set and a 2N® IP Verso intercom with a card reader – a solution that would consume 50 percent less power.

## Result

Sharing common sustainability goals was paramount in the partnership. With Axis, PAE saw a lot of momentum toward sustainability both in the materials being used in Axis cameras and the manufacturing processes employed. PAE found that the panoramic view each Axis camera delivers gave the property's security monitoring company great awareness in and around their building. For example, the Axis cameras were able to catch someone setting a fire outside of the rear entrance and alert security to douse it before any significant damage was done. For access control, the 2N intercom not only gives PAE employees and other tenants easy access to the building, but it also allows them to visually screen visitors and unlock the front door remotely.

[Read the full story](#)

# The Axis advantage

When you choose Axis, you reap the benefits of some of the core values that come with an Axis solution. As a company, we are at the forefront of cybersecurity and our sustainability goals are focused on both sustainable innovation and long-term ways of working with suppliers and partners. An Axis solution is always based on open standards ensuring future-proofing and designed with an optimal total cost of ownership in mind. As a customer, you can rely on Axis to support you all the way, from choosing the solution and installation to ongoing support and upgrades.



## Driving cybersecurity

Cybersecurity is one of the greatest threats facing the digital world today. The threat of cyber-attacks also applies to commercial buildings. If a building's network is hacked, all systems of the building can be hijacked, including elevators, heating systems, and access solutions.

With Axis software, cybersecurity best practices are at the forefront. Our ARTPEC chips are designed in-house, sealing back door entry points for enhanced cybersecurity, and network devices include a variety of built-in cybersecurity features. You receive up-to-date cybersecurity advice,

news, and updates directly from Axis. With the AXIS Device Manager tool, managing all major installation, security, and maintenance tasks is straightforward and cost-efficient.

For network solutions, data captured over the network must be both safe and treated in accordance with evolving data protection legislation. Axis has the expertise needed to assess risk, and we build processes for data protection into every level of our offering, all the way from the design process through day-to-day operations support.

## The Axis advantage

### Sustainability at every level

We want to make a smarter, safer world by doing business the right way. That's why our sustainability goals are focused on ensuring we are both a reliable partner and a driving force for sustainable innovation.

Our social contract extends beyond our employees to include our suppliers, whom we also hold to the highest environmental, social, and ethical standards. We believe in transparency and sharing best practices with our partners, so we share our knowledge through the Axis Academy, on blogs, and on our website.

Our ideas of innovating responsibly and protecting our planet are tightly related at Axis. We take pride in how our technologies help our customers meet their own sustainability goals.



For example, powerful edge-based processing and Axis Zipstream technology decrease hardware needs and cut down on bandwidth and storage requirements. Additionally, cameras that perform well in low-light conditions demand less energy and limit light pollution. With focused efforts to phase out hazardous substances, minimize waste in product design, and prioritize eco-friendly goods and transport, we are constantly working to minimize the impact of our products on the planet, all the while without compromising quality or functionality.



### Open standards for flexibility and scalability

The philosophy of openness sits at the heart of Axis. By building our technology on open standards, we ensure flexibility and scalability, and we make it possible for you to integrate our products with the existing systems in your smart building.

A network video solution based on open standards offers you more freedom – when your needs or priorities change, you aren't locked into a proprietary system. Additionally, because it's easy to scale up and down both the size of the system and the functionality of the solution, you don't need to purchase all your functionality upfront. We provide solutions that fit your needs and ensure they can evolve along with you.

## The Axis advantage

### Optimizing the total cost of ownership

Understanding the true cost of a network video solution involves more than just the camera price. Beyond the initial purchase, expenses for solution design, deployment, operation, and maintenance dominate the total cost of ownership.

Axis designs high-quality, rugged cameras that last, even in harsh environments, and we offer extensive tools to simplify product selection and site design. As a result, you save time and money everywhere from the planning and installation stages through ongoing maintenance and repair. Our technology reduces bandwidth, storage, and energy consumption, further cutting operating expenses. Above all, Axis cameras offer dependable performance, providing peace of mind throughout their lifespan.

### Support all the way

You can always rely on Axis for the highest quality products, service, and support. Working with our global network, we provide tools and resources to support you every step of the way, starting with selecting hardware and designing your installation. We'll help you identify the analytics that will get the most out of your solution and connect you to our global partner network for custom solutions.

Support doesn't stop after installation – we keep you up and running with ongoing support and cybersecurity updates. We also offer online support, product warranties, an advanced replacement policy, and industry-recognized training. We make sure that you'll receive assistance wherever you are, whenever you need it.



## About Axis Communications

Axis enables a smarter and safer world by improving security, safety, operational efficiency, and business intelligence. As a network technology company and industry leader, Axis offers video surveillance, access control, intercoms, and audio solutions. These are enhanced by intelligent analytics applications and supported by high-quality training.

Axis has around 5,000 dedicated employees in over 50 countries and collaborates with technology and system integration partners worldwide to deliver customer solutions. Axis was founded in 1984, and the headquarters are in Lund, Sweden.

For more information, visit:

[axis.com/solutions/commercial-real-estate](https://axis.com/solutions/commercial-real-estate)



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