How Physical Security Solutions Add Value to Smart Building Applications

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What is a smart building?

There are various definitions, but my version is a *Smart Building that integrates data from different systems together to create a better real estate space for* ***owners****,* ***occupants,*** *and the* ***environment****.* Let's break this down

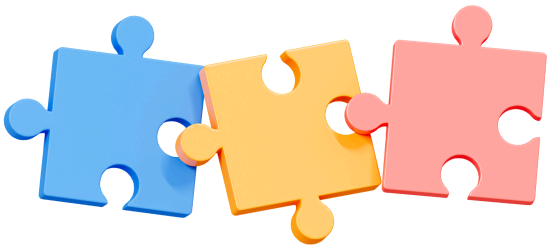
- The **owners** are the actual owners of the building. They pay the bills and have the job of both reducing operating expenses (OPEX) and maximizing use of the building.
- The **occupants** are the tenants and people who occupy the space. Occupants want to come to a building that is not only safe and secure but is a healthy and an inviting place to dwell.
- The **environment** is everything outside the building meaning the building needs to minimize negative impact on the surrounding area and the environment.

What Data in a Building is being integrated?

Data from the various sensors and systems in a building that can be used. The most common in a smart building are temperature, humidity and air quality to drive HVAC but video and access control also can provide data, but most smart buildings do not use as they see these systems as just for security applications

Some basics on other systems in a building

The most common system in a Smart Building is a Building Automation System (BMS) which mostly controls HVAC but can integrate with other systems as well. Building Automation systems:



- Collect data on Temperature, Humidity, Air Quality and more to analyze then automatically adjust building systems for tenant environment and energy savings
- Continuously monitor status of all HVAC equipment and more, creating fault detection alerts for facility managers to act on

- Perform trend analysis for all data collected to better understand how to better optimize building performance

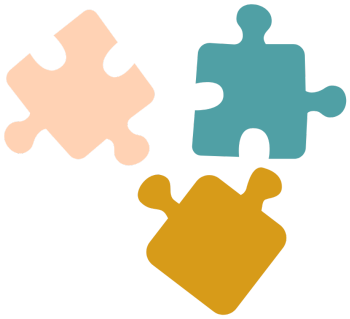
Another key area is Lighting. Lighting in a smart building is more than LED lights and switches. Many installs have a lighting control system that includes:

- Scheduling and Daylight Harvesting (via lux sensors) for Energy Savings
- Occupancy Detection also for energy savings
- Tunable White Lighting for appearance, mood and Circadian rhythms

Challenges and goals

The main drivers of deploying a smart building solution include:

- Environmental government regulations: Whether this is to save on OPEX costs or to meet mandates such as Local Law 97 which states that buildings over 25,000 square feet are required to meet new energy efficiency and greenhouse gas emissions limits by 2024, with stricter limits coming into effect in 2030. Without burning fossil fuels onsite, most buildings will need to provide space and water heating using electricity instead, which includes energy efficiency programs. To make the situation even more complicated, electric cars are becoming more mainstream and even mandated in years to come meaning some buildings will have higher energy demands just when they worked to reduce energy consumption.
- ESG and Sustainability business needs: The term **E**nvironmental. **S**ocial and **G**overnance or ESG became officially mainstream in 2005 as part of a report from the United Nations encouraging all business stakeholders to embrace the concept. It has evolved to become a set of best practices used by companies and investors alike as another measurement of business health. ESG and Sustainability goals like Net Zero are driving Smart Buildings technology adoption to not only understand the impact a business has on the global external environment but also the social health environment within an internal building workspace. Today, many companies are including ESG/Sustainability as a key ROI metric to mitigate business risk and prepare for the future.



- Back to Work Strategies: The COVID pandemic has created a new normal that is causing a major impact on commercial office buildings. Many employees changed to a hybrid work model of coming into the office only part-time or not at all. This shift has left building owners and facility managers with the challenge of not only evaluating how to best optimize office space to save on costs but also transforming the workplace into an environment that makes employees want to come into the office versus working at home more. In addition, while most people no longer wear masks, many are more health conscious, especially when it comes to air quality. While COVID brought this to the top of mind, air quality continues to be an area of concern. A perfect example is the past fires from Canada that resulted in record low air quality indexes in major cities in the northeast.

Change the perception

Since migrating from the Physical Security market to the broader Smart Building market, I have had many discussions with smart building practitioners who say they integrate all building systems and data together but when questioned admit they leave out video surveillance and access control. Why? The view is that these are security systems only and have no other value. They also state that integrating these other systems will compromise privacy and **P**ersonally **I**dentifiable **I**nformation (PII). To counter this start with simple examples of how data from video surveillance and access control can be used for occupancy analysis to help understand how a building is being used and then automate to reduce OPEX costs. To address privacy concerns,

- All systems should anonymize the data meaning it will not create any Personally Identifiable Information (PII).
- Video Surveillance and Access Control systems can provide anonymous data identifying a person as a person only vs. name, age, gender, race etc.

- Video cameras offer AI based Video Analytics that can only identify a person or a person's face.
- Facial Detection is not the same as Facial Recognition. Facial Detection detects ANY FACE and is anonymous. Facial Recognition systems match a face against an existing face in a database.

Seek out other stakeholders

Beside the security, loss prevention, etc managers, every organization will also have facility, sustainability, ESG managers that either directly or indirectly are looking for integrated smart building solutions. Start with the security contacts you have explaining the broader picture which would include bigger budgets once all understand that video surveillance and access control are not only solutions for security applications.