



# The use of smart building technology can enable more efficient facilities management and help support a safe and healthy environment

COVID-19 has caused widespread disruption. Many are working from home to help prevent the spread of infection. However, as workers return to office buildings, corporate tenants and building owners need to plan and prepare. Technology, especially smart building technology, can help. Here are a few ways that smart building technology can help answer the most critical reentry considerations.

## How can we track potential exposure within the office?

### People movement

As people come back to the office, there will be a need to practice social distancing. Even with these precautions, organizations may want to track employee office interactions. Examples of enabling technologies include:

- Carpeting embedded with LED lighting can provide visual cues about where and how far apart people should stand
- Elevators can be programmed to be one-directional to limit riders and close contact
- Mobile apps can track office occupants and who they come into contact with
- Screening technology could be used to measure a visitor's temperature before they enter a facility

## How can we reduce and better manage density?

### Occupancy planning for the post-COVID-19 workplace

Workplace planning and occupancy trends may have resulted in individual and team workspaces that could be too densely populated for COVID-19 requirements or guidelines. Organizations may need to rethink workplace design; however, in the short-term, organizations should consider the following:

- Sensors to measure workplace occupancy
- Occupancy analytics to measure the maximum number of people in an area
- Workplace apps to manage employee movement throughout offices and track which areas occupants use most often
- Reservation systems to relocate meetings to larger team spaces as needed (and shift physical meetings to virtual meetings)

## How can we improve air quality in our facilities?

### Environmental management and ventilation

Effective ventilation has been shown to reduce infectious disease transmission in buildings and is a key infectious disease control strategy.<sup>1</sup> Key ventilation-related tactics may include:

- Collaborate with building owners and landlords to improve air flow throughout a facility, with a focus on high traffic areas
- Deploy air filtering, UVGI, and white light LED 'disinfection' systems
- Use indoor air sensors to measure air quality
- Coordinate data from air sensors with occupancy analytics to further refine the ventilation strategy and prioritize areas for cleaning

<sup>1</sup>Role of ventilation in airborne transmission of infectious agents in the built environment  
<https://www.ncbi.nlm.nih.gov/pubmed/17257148>





## How do we make the environment more comfortable?

### Smart maintenance for HVAC systems

In addition to improving ventilation to help create safe and healthy environments, organizations should reevaluate SLAs around HVAC maintenance, with the goal of improving air quality and reducing infections. Considerations include:

- Use Automatic Fault Detection and Diagnosis (AFDD) to inform opportunities for corrective and preventative maintenance in the HVAC or other facility systems
- Use of air quality sensors to gather information on CO2, VOCs (volatile organic compounds), and other levels of pollutants to trigger increased ventilation or the cleaning or replacement of dirty air filters

## How do we keep our facilities cleaner?

### Facility management and cleaning

As people return to the office, organizations should re-evaluate and increase SLAs around cleaning. Focusing on high traffic areas:

- Combine information from occupancy analytics and workplace reservation systems to indicate which workspaces and meeting rooms are used the most
- Enable cleaning staff with mobile apps to direct their activities throughout the day/evening
- Use QR codes throughout the office to track timing and frequency of cleaning
- Revise policies to allow time between meetings to allow for cleaning and updates to furniture with the addition of self-cleaning surfaces

## How can we better manage our facilities?

### Building management systems (BMS)

BMS can provide significant information to improve the operations and environment of a facility. Key considerations include:

- Make BMS maintenance and operations a focus of the organization
- Establish the BMS as a central point of information for facility operations
- Increase use of cloud hosted building management/operations capabilities, including modern analytics to support remote facility monitoring and management
- Upgrade building networks and use IoT to increase the items connected to the BMS

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AFDD = Automatic Fault Detection and Diagnosis  
HVAC = Heating Ventilation and Air Conditioning

BMS = Building Management System  
IoT = Internet of Things

UVGI = Ultraviolet Germicidal Irradiation  
SLA = Service Level Agreements

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