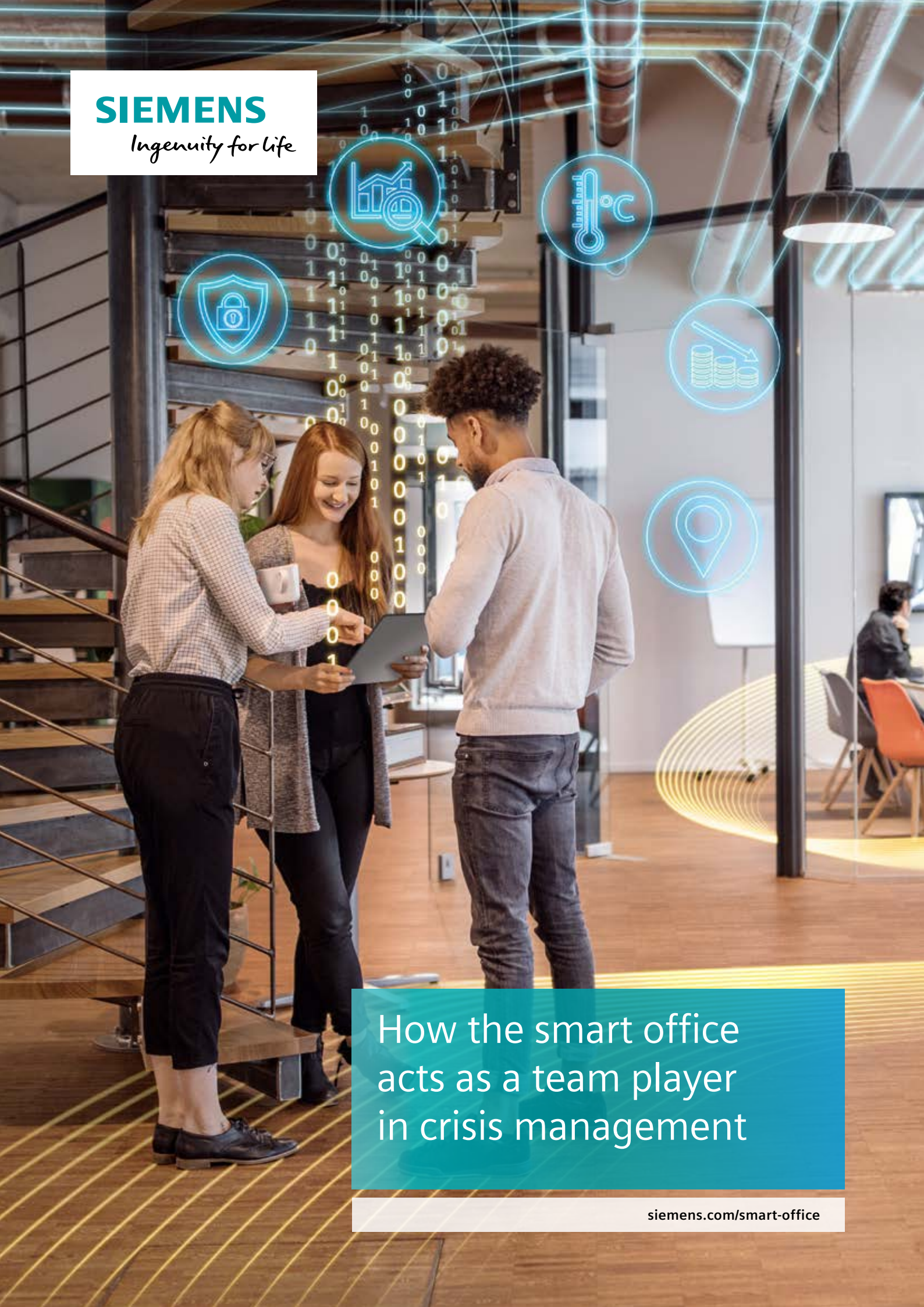


How the smart office acts as a team player in crisis management

siemens.com/smart-office

How the smart office acts as a team player in crisis management

In terms of work, many of us have had to make significant changes. Working at home has become the norm for millions of people as workspaces have shut down to help prevent the spread of the virus. So what does that mean for office buildings, and how can they become an active contributor in times of crisis rather than simply a passive casualty? While workplace digitalization has many benefits, the COVID-19 pandemic has brought into sharp focus its often-ignored role in crisis management.

At the start of 2020, nobody envisaged that the world would witness a global crisis. The effects of COVID-19 on the way we live and work continue to play out – and will for some time. Never before have we experienced such a global impact on our everyday lives, and the repercussions will be felt long after the pandemic is a distant memory.

This whitepaper outlines the role of the smart office in contributing to a crisis management response, identifying some of the digital technologies available and how they support the operation of office buildings while keeping the occupants healthy and safe. With the use of workplace applications it is possible to deliver timely and local communication, showing how density management can be facilitated through sensors and booking software and how risk mitigation can be achieved with data and access control. The current situation has shown that the need for flexible, responsive and adaptable office spaces is greater than ever – and therefore it is of highest importance that the infrastructure is able to connect to the building users as well adapt to the situation around.

The challenges of crisis management

Crisis management is defined as "the application of strategies designed to help an organization deal with a sudden and significant negative event."[1)] Typically, there are three main characteristics of a crisis: a threat to the organization; an element of surprise; and a short time to make critical decisions. Unlike risk management, crisis management requires actions to be taken by the organization in a specific and compressed timeframe – the crisis lifecycle – and encompasses a number of stages, from immediate response to re-entry and long-term changes.

While most organizations will have some degree of focus on risk mitigation (prime examples being evacuation preparedness in the event of a fire or managing intruders and keeping people in a building secure), crisis management is often non-existent or certainly not uppermost in operational thinking. Organizations with robust business continuity plans in place have certainly reaped the benefits in recent months, implementing procedures and practices that had already been considered and identified rather than simply reacting to the new world in which we find ourselves. Such planning is unlikely to have revolved specifically around a viral pandemic, but many of the practices are valid whatever the nature of the crisis.

1) https://whatis.techtarget.com/definition/crisis-management

The building is a vital member of the team

McKinsey identifies the importance of teamwork in responding effectively to a crisis: "In routine emergencies, the typical company can rely on its command-and-control structure to manage operations well by carrying out a scripted response. But in crises characterized by uncertainty, leaders face problems that are unfamiliar and poorly understood.

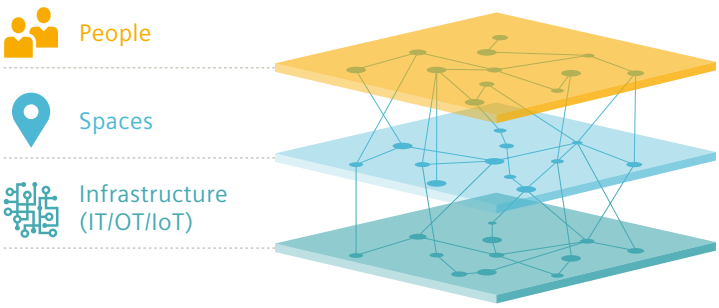
A small group of executives at an organization's highest level cannot collect information or make decisions quickly enough to respond effectively. Leaders can better mobilize their organizations by setting clear priorities for the response and empowering others to discover and implement solutions that serve those priorities."[2)]

During a crisis, a network of teams carries out responsives outside of normal operations, as well as adjustments to routine business activities

Illustrative network of teams for a pandemic response; Source: McKinsey, 2020

In the figure above, it is clear that the office building and the technology within it should play a fundamental role in effective crisis management. Through digitalization, a building can actively generate relevant data points and support communication and operation. If the building is not being put to work to optimize performance and efficiency of response, then a vital element of the team is being ignored. The lines are becoming increasingly blurred between buildings, technology and community as new workplace solutions are introduced based on intelligent building infrastructure. Therefore, it is crucial to acknowledge the different layers within an office building which generate data points – from infrastructure to spaces to people – and the ability to connect them.

The building itself has an ever-increasing role to play throughout the lifecycle of the crisis – and beyond. Below we will explore some concrete examples.



The building as a platform: connecting the data points of the different layers for most valuable insights.

2) https://www.mckinsey.com/business-functions/organization/our-insights/leadership-in-a-crisis-responding-to-the-coronavirus-outbreak-and-future-challenges, March 2020

Providing timely local information to building users via the Comfy workplace app.

Timely communication

Effective communication is important throughout any crisis response, but never more so than in its first stages when it is vital to raise awareness. While in recent years the built environment has been actively connecting buildings with their occupants through digitalization, the focus has been primarily on occupant comfort and satisfaction rather than crisis management. In times of crisis, though, it can be a lifeline for people – a way of getting timely local information.

Providing timely local information is crucial. Workplace apps offer a platform for emergency communication, with push notifications sending vital information to occupants regarding the safety situation in different parts of a building, along with regular updates on actions being taken to ensure the safety of those spaces going forward. Such communication is also important in the recovery and monitoring phases of the crisis as a gradual return to normality takes place. To facilitate this effectively, employees require instructions regarding what actions are necessary to ensure a safe return to the office environment, taking into account any changes in procedures and processes which may have been applied during the crisis. An example would be the management of public spaces such as cafeterias, communicating the adoption and relaxation of restrictions as required. The speed which such information can be communicated is particularly crucial in a crisis scenario; reliance on just e-mail, for example, may potentially leave a significant number of occupants out of the loop.

From the perspective of building users, effective communication is vital in creating trust in the measures taken, in addition to the infrastructure that exists or has been put in place in response to a crisis.

Providing a healthy and safe environment

Some of the effective measures adopted in the fight against COVID-19, the most recent example of a crisis, were early detection of symptoms and (self-)isolation, cleaning and disinfection, as well as social distancing. Nevertheless, there are a number of different crisis scenarios, from extreme weather events and security breaches to infectious diseases, where the smart office and the technology deployed can make a valuable contribution.

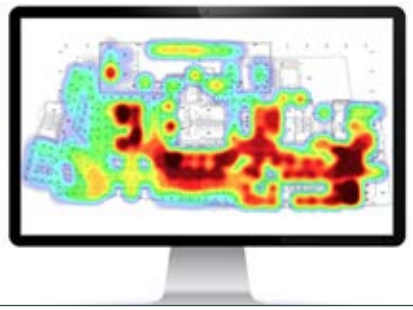
1. Space usage and density management

The World Health Organization (WHO) offers guidance on safe density which can be used as the basis for effective measures. An important factor when it comes to space usage and space management is analytics. Sensor-based space analytics makes it possible to track in real-time which areas within a building are used the most and which are underutilized.

This allows the space layout to be rearranged in order to meet the current needs – for example, to support social distancing – or to define recommendations and measures on how the spaces should be used.

Additionally, access control systems can be used to count the number of people entering and exiting a given area. To assist in reinforcing the necessary changes in human behavior, notifications could be given if a designated number is exceeded within a given space.

Real-time data can help support the required shift in employee mindsets to implement density management measures in the workplace. The optimum number of people in a given area will differ from case to case and from space to space. Analytics provides the flexibility to address this – from a building to a floor or room and even at the desk level.



2. Desk and space booking

In addition to the insights gained via analytics, booking spaces and desks prior to arrival can help manage density. This avoids overcrowding and gives people a tool to ensure that a desk is available before they commute to the office – especially if availability has been reduced. Using workplace solutions that allow such bookings, you can actively influence the availability of bookable desks and spaces in order to adhere to the measures put in place and manage density accordingly. Shift patterns can also be adopted to reduce the number of people in a building during any given period, with provision for a disinfection cycle between shifts. This provides reassurance for employees that their working environments are safe. This message can be reinforced with a physical or digital notification that a desk/chair/room has been cleaned and disinfected. Alternatively, giving employees the ability to "check out" when they no longer need a desk could trigger a work order to clean or disinfect the desk or space.

3. Employee screening

With the current crisis caused by COVID-19, we may see a significant shift towards a mindset where people are positively discouraged from coming to work when they are not feeling well. Technology can support that approach with thermal cameras which provide alerts if someone is showing symptoms, such as elevated body temperature.

Since the cameras are linked to the access control system of the building, only people with normal body temperature would be allowed to enter. Depending on the nature of the crisis, people with elevated body temperature would not be granted access for a certain period of time – 10 to 14 days in the most recent example.

Thermal cameras ensuring contactless temperature measurements to increase protection of building occupants.

4. Air quality

Air quality is central to ensuring the comfort and well-being of employees. For example, poor ventilation can contribute to the spread of toxic gases in case of a chemical incident or a fire – or facilitate the spread of viruses. Additionally, in the event of an incident, advances in emergency management technology can allow central or remote closure of certain areas of a building; an example would be shutting off access to an infected floor. Setting humidity levels which discourage the growth of infection is important as well.

For this reason, air quality can be a factor that gives employees greater confidence and trust in the safety of their environment. This can be enhanced by simply displaying the current air quality metrics and giving them the opportunity to provide feedback via their smartphone.

5. Contagion mitigation

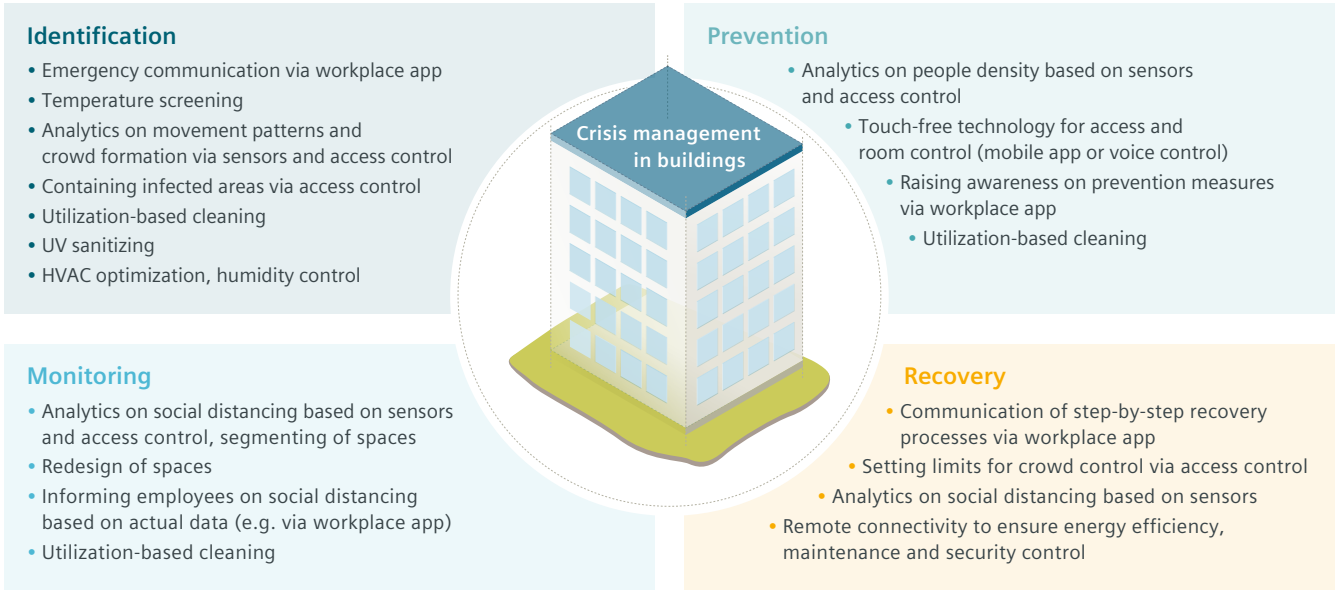
Movement patterns of occupants within a given space can be used to determine areas where crowds typically form. Additionally, they allow on-demand maintenance schedules with targeted deep-cleaning focused on high-density and/or high-risk areas.

This ensures a usage-and data driven maintenance and cleaning/disinfection of the building and is therefore an efficient instrument in crisis management. Sanitizing using UV light has been shown to be effective against certain viruses, but the technology is still in its infancy. In light of the dangers this represents in terms of potential human exposure and its inefficiencies in disinfecting dark corners, challenges remain that hamper the adoption of this technology in today's buildings, with a fundamental redesign of spaces required for it to become a viable option. [3)]

6. Touch-free technology

Technology can also help contagion mitigation on a wider scale. In the current crisis, doors, elevators and light switches have become sources of insecurity. Touch-free technology, such as automatic doors, mobile access control, mobile or voice-activated elevators or control of the room environment (such as light and temperature) via smartphone, can help mitigate contagion.

Buildings as active contributors in crisis management



Overview of the office building as an active contributor and team member in crisis management.

3) https://memoori.com/covid-19-lockdown-leaves-empty-smart-buildings-to-ponder-their-failings/

Meeting the need for more flexible workplaces

There is an increasing need for centralizing resources which employees can access, whatever their location, and the trend for unassigned seating or "hot desking" office environments which was already well underway prior to COVID-19 will gain momentum as building owners look to optimize workspaces. The use of configurable desk booking software in such environments was already gaining traction, and the potential it now offers to identify safe working distances, as well as help ensure that those distances are maintained, will further promote the adoption of such technologies.

IoT sensors are becoming vital for organizations because the transparency provided by space utilization data enables building owners and tenants to determine how much space is actually needed at a time when reducing costs will be a prime focus.

In a crisis when a large number of commercial buildings are closed, many facilities need to be kept running regardless or even because of the crisis. Some of these buildings run at average or above-average capacity and have a high number of occupants, while others are fully operational but almost empty. One consequence of the COVID-19 pandemic and the workplace response is likely to be a lasting move towards workplaces and office buildings that are flexible, adaptable and responsive.

A path through a world of uncertainty

The COVID-19 pandemic has brought many questions. Many of them remain unanswered, creating a period of global uncertainty and confusion. However, one thing is certain: The crisis has had a dramatic effect on the way we work, and these changes will have lasting consequences. Many organizations that had been resisting the trend towards increasingly flexible workplaces have been forced to adopt new practices in order to stem the transmission of the virus. The pandemic has brought a redefinition of the workplace and provided a catalyst for transforming the way offices operate worldwide. Central to this is the need for greater flexibility, particularly the capacity to adapt in the event of a crisis. Digital infrastructure makes the building a team player in crisis management. It supports employee-centric behavior, keeping people safe and informed and reassuring them that appropriate measures are being taken. The smart office makes the operations of an organization more resilient through preparedness based on a proactive rather than reactive foundation.

For some time, there has been a significant move towards a people-centric approach to buildings, recognizing their potential to interact with their users instead of simply perceiving them as inflexible, passive assets. As we continue to cope with COVID-19 and move into a post-lockdown era, this will only intensify. There will inevitably be a period of adjustment, but smart technologies and their enormous potential are here for the long term – not only for this crisis but also for those yet to come. The contributions of the smart office in crisis management can be significant: Digitalization connects users not just to the infrastructure – but also to the business and, most importantly, to each other.

Smart Infrastructure intelligently connects energy systems, buildings and industries to adapt and evolve the way we live and work.

We work together with customers and partners to create an ecosystem that intuitively responds to the needs of people and helps customers to better use resources.

It helps our customers to thrive, communities to progress and supports sustainable development.

Creating environments that care.
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