

The SIEMENS logo is displayed in a bold, teal, sans-serif font. It is positioned in the upper left corner of the page, within a white rectangular box. The background of the entire page is a light blue gradient with several 3D rendered coronavirus particles scattered throughout, each showing its characteristic spherical shape and protruding spike proteins.

Ingenuity for life

Keeping employees safe through remote building connectivity

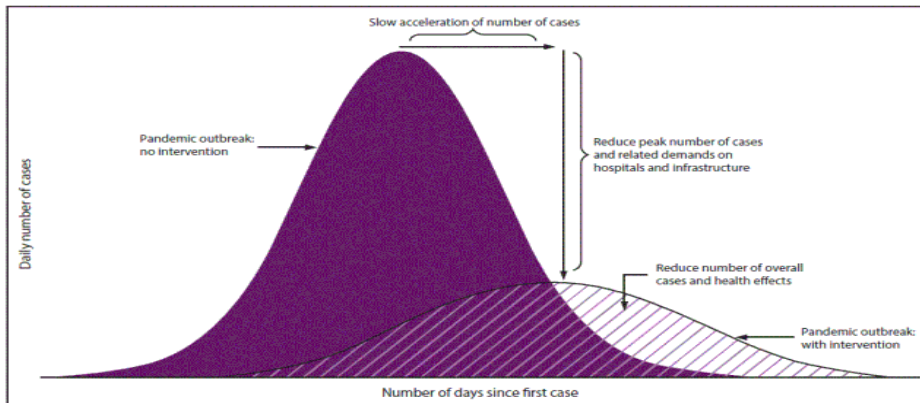
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During times of crises and global health pandemics, there's no question that immediate attention goes to saving lives and preventing the spread of viral infection. First responders such as doctors and nurses must be equipped with the support, personal protective equipment (PPE), and medical equipment (e.g., ventilators) they need on the front line. National and local governments must take aggressive steps to ensure daily number of disease cases are at a manageable level, also referred to as "flattening the curve," to ensure medical professionals can provide treatment and care.

As many U.S. states issued shelter-in orders and social distancing guidelines in late March 2020—when the World Health Organization (WHO) declared COVID-19 a pandemic caused by a coronavirus¹ [specifically severe acute respiratory syndrome coronavirus 2

(SARS-CoV-2)]—the epidemic brought awareness to remote access in a number of ways. Not only did remote access via Virtual Private Network (VPN) become more widespread as those employees able to telework did due to shelter-in, which helped to reduce coronavirus exposure risks to employees. In fact, a Pew Research Center survey² conducted in late March 2020 found that 40% of adults aged 18-64 reported they had worked from home as a result of COVID-19.

It also emphasized the value of remote building connectivity and access for those Essential Businesses³ (e.g., food supply and processing, medical and healthcare services, information technology systems, transportation and logistics, telecommunications and more) required to maintain operational efficiency and reliability to secure the safety and wellbeing of employees, especially in trying times.



The graphic provides an illustrative depiction of how the act and timing of social distancing can affect the COVID-19 epidemic curve. *Image courtesy Centers for Disease Control (CDC) and Live Science⁵.*

Consider that on average, heating, ventilation and air conditioning (HVAC) systems make up the majority of building energy consumption (i.e., 35% of total building energy⁴). Now multiply that average number 10-fold for HVAC systems running at peak 24/7 and when considering some of the impacts that global epidemics such as COVID-19 can have on healthcare facilities. Massive spikes in inpatient volume, increased on-call healthcare staff, and shortages of patient beds or medical supplies become an unfortunate ‘norm’ for such complex, critical environments. The results could be life-threatening if the HVAC system is not preventatively maintained while running at peak operation to compensate for high, in-building population.

The capability to remotely monitor and maintain buildings reduces exposure risks for service employees, and provides facility managers operational visibility and control in order to adjust HVAC equipment performance based on occupancy or environmental conditions. Remote access also allows for database configuration and troubleshooting or root-cause analysis as needed, and visibility into performance dashboards to assess energy consumption levels as it relates to building operation and make necessary adjustments—all without the need to physically be on site.

Now, factor in the benefits to scale remote capabilities to the increased number of temporary spaces set up since COVID-19. From temporary coronavirus hospital wards and healthcare tents to normally empty convention centers spaces (during non-peak seasons) such as New York’s Jacob K. Javits Center or Chicago’s McCormick Place being

transformed into field hospitals, demand remains for real-time emergency services.

Which means that remote access must be secure in such sites and networks must remain resilient. During such situations, it is important to understand all the layers—from the Cloud application capabilities, to the secure connectivity layer and finally to the on-premise protocols—to address any security concerns with remote connectivity. By utilizing a **complete building solution** that leverages the Cloud but also provides an on-premise **gateway** that communicates via BACnet and Modbus protocols to discover BACnet devices and provide provisioning on the cloud, device management on-premise remains secure while multi-sites can be monitored and controlled 24/7 remotely from one interface.

Beyond COVID-19

It remains to be seen when global economies reach the point of considering lessons learned beyond COVID-19. However, businesses may consider early on how incorporating secure remote building monitoring into their long-term operational strategies can ensure future business continuity and resiliency when unpredictable events occur.

Ensuring secure remote access to your sites

The **Building Operator Cloud** application for remote building monitoring and control keeps sites secure using the Connect X300 gateway which ensures:

- Physical USB ports on the gateway are restricted to specific USB devices to prevent security threats
- Cloud data is encrypted
- All data communication between gateway and Cloud is encrypted following HTTPS/TLS1.2 protocol
- OS on the gateway is protected
- Basic input/output system is protected
- Entire solution is evaluated via internal security checks as well as penetration tests (pen tests) to prevent system vulnerabilities
- Closure of northbound and southbound ports*

Note: certain exceptions for port closures apply to ensure certain data and network communications. Please **contact us with questions or for more information.*

References

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3. March 19, 2020, "Guidance on the Essential Critical Infrastructure Workforce," Cybersecurity & Infrastructure Security Agency (CISA), Department of Homeland Security (DHS): <https://www.cisa.gov/publication/guidance-essential-critical-infrastructure-workforce>
4. September 2015, "Quadrennial Technology Review An Assessment of Energy Technologies and Research Opportunities," U.S. Department of Energy: <https://www.energy.gov/sites/prod/files/2017/03/f34/qtr-2015-chapter5.pdf>
5. Brandon Specktor, Brandon, March 16, 2020, "Coronavirus: What is 'flattening the curve,' and will it work?" Live Science of Future US Inc.: <https://www.livescience.com/coronavirus-flatten-the-curve.html>

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