SIEMENS
Ingenuity for life

Improve air quality

and come back with confidence

- Reduce the spread of airborne and surface contaminants
- **Improve air quality**
- Manage energy performance
- Enable social distancing
- Provide real-time updates
- Sustain healthy & safe environments
- Defer capital budgets

Introduction

As businesses begin to craft and create plans to return to workplaces, we know that doing so as safely as possible is their primary objective. Doing this work effectively will require long-term planning, comprehensive solutions, and consultations with experts from both the science and industry communities.

In this paper, we present one of our strategies to help organizations come back with confidence: **improve air quality**. Healthy indoor environments are proven to be associated with lower absenteeism* and better performance . This is not a new or emerging area of research and exploration, but it does carry greater importance today as organizations consider their return-to-work approaches.

Objective	Approach
Implement new HVAC maintenance strategies	Predictive and proactive analytics and monitoring
Upgrade the level of filtration	Advanced filtration strategies and mechanical services

With specific regard to the COVID-19 pandemic, ASHRAE leadership has prepared two statements on the transmission of SARS-CoV-2 (the virus that causes COVID-19) and the operation of HVAC systems:

Transmission of SARS-CoV-2 through the air is sufficiently likely that airborne exposure to the virus should be controlled. Changes to building operations, including the operation of heating, ventilation, and air-conditioning systems, can reduce airborne exposures.

Ventilation and filtration provided by heating, ventilation, and air-conditioning systems can reduce the airborne concentration of SARS-CoV-2 and thus the risk of transmission through the air. Unconditioned spaces can cause thermal stress to people that may be directly life threatening and that may also lower resistance to infection. In general, disabling of heating, ventilation, and air conditioning systems is not a recommended measure to reduce the transmission of the virus.

In other words, conditioned spaces present less risk than those that are not, so examining air quality in general, including what's brought in, how it's conditioned, temperature and humidity setpoints, etc. is an important step toward protecting the health and safety of people inside the building. These goals may be achieved through dedicated approaches indoor air quality.

New maintenance strategies help properly clean and condition indoor air

By applying new **predictive and proactive** maintenance strategies – such as cloud-based analytics to continuously monitor mechanical and automation systems – HVAC equipment can help to properly clean and condition indoor air. Additional **engineering controls and technologies** can be applied to improve the health of building systems as well as air quality.

Advanced filtration technologies for better air quality

Where HVAC equipment can support it, upgrading the level of system filtration can help prevent fine particles from getting through filters and spreading throughout the building. ASHRAE has suggested MERV-13*** as a way to help prevent the spread of airborne viruses. But mechanical systems must be sized appropriately for this intense level of filtration; and regardless of capacity, even the best filters must be properly installed in air handling units to be effective.

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* U.S. Environmental Protection Agency
** Lawrence Berkeley National Laboratory
*** ASHRAE.org