

A black and white photograph of an industrial interior. The ceiling is high with exposed wooden beams, large metal ductwork, and hanging light fixtures. The floor is made of dark wooden planks. In the background, there are several glass doors and windows. The overall atmosphere is gritty and industrial.

A COMPLETE GUIDE TO

BRINGING YOUR **BUILDING** BACK ONLINE

BROUGHT TO YOU BY **E3M SOLUTIONS**

WHAT TO EXPECT

MANAGING NEW CHALLENGES IN A CHANGING WORLD

OUR TEAM IS HERE TO HELP PREPARE YOU TO BRING YOUR BUILDING BACK ONLINE AND STAY ENERGY EFFICIENT THROUGH THE PROCESS.

1

REEVALUATING HVAC

Our recommendations for your HVAC to optimize energy usage & prioritize employee safety.

2

AVOIDING POTENTIAL PITFALLS

Don't make costly mistakes, the most common pitfalls to avoid as you adapt and create a healthier building environment.

3

OPTIMIZING NEW LOADS

The reality of continued social distancing & strategic phasing of workforce re-engagement.

4

PLANNING FOR THE FUTURE

How to plan for the future and ensure the long-term safety of your people and building.



ABOUT

At E3M Solutions, our mission is to create financially sustainable and environmentally responsible solutions to make a positive human impact. At the core of everything we do is the person. Whether it's the design architect or a line worker at a manufacturing facility, we build every solutions with the people impacted in mind.

OUR EXPERTISE

energy solutions

lighting retrofits / energy audits / air audits / predominant use studies / rebate coordination

design solutions

design build / full service MEP engineering / virtual design / BIM coordination

optimize365

coming soon: the best solution to manage & optimize your energy usage

OUR CREDENTIALS



industry experience

Manufacturing / Industrial / Food Processing / Office / Commercial / Retail / K-12 Schools / Universities / Hospitality / Conference & Convention / Religious & Worship

www.e3msolutions.com

A grayscale background image on the right side of the page shows two people from behind, looking at a large computer monitor. The monitor displays a complex 3D architectural or engineering model. The setting appears to be a professional office or design studio.

**FINANCIALLY
SUSTAINABLE &
ENVIRONMENTALLY
RESPONSIBLE
SOLUTIONS FOR A
POSITIVE HUMAN
IMPACT.**

REEVALUATING HVAC

Reduction of the Demand Control Ventilation (DCV) and increasing outdoor air. With the temperatures beginning to warm up, now is a great time to increase the amount of fresh air and air turn over within your space. This can decrease bacteria and other particles in the air, while improving the overall facility air quality. However, this can also introduce a source of unwanted items like dust, pollen, odors, etc. that are normally only present outdoors.

Run HVAC continuously to increase air movement and reduce stagnant air. By running the system for longer hours or even continuously, air movement in the space is increased.

rating can capture more particles, viruses and bacteria. However, make sure you know your system's capacity before increasing. If your system isn't compatible with a higher filtration system, it could be costly.

Incorporating UV lighting into HVAC systems and potentially general lighting. Be mindful of the different types of UV lighting. If you're going to install these fixtures, make sure they specifically call out UV-C lighting for virus mitigation. Additionally, if general UVG lighting is implemented, it should be done during un-occupied times to limit staff exposure to the UV lighting.

OPTIMIZE SPACE HUMIDITY

Studies and lab tests have shown that the optimal humidity for the lower of bacteria growth and virus life is between 40% - 60%. Humidity levels outside of this continuum are breeding grounds for viruses & bacteria, allowing them to live on surfaces for longer periods of time.

This also extends the amount of time for air travel throughout filters and other systems for cleaning, ensuring dust and other particles do not begin to build up.

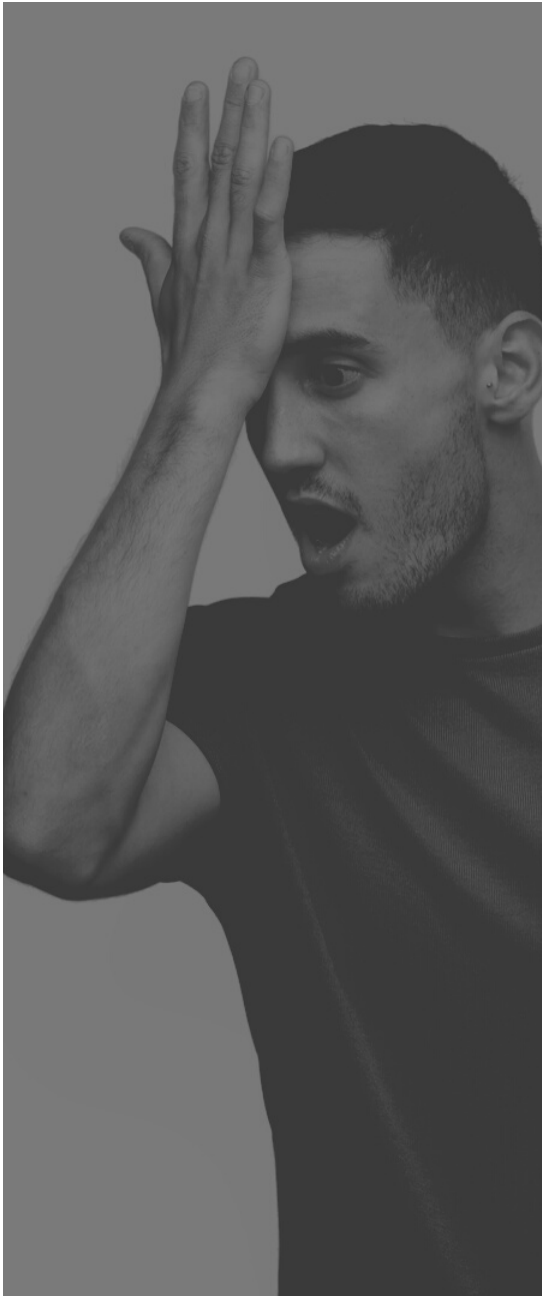
Increase the MERV rating on your filtration system. ASHRAE recommends increasing to MERV 13 or higher as filters with a higher MERV

Bi-Polar Ionization to purify the air and the ductwork. This can help to negatively affect virus & bacteria while also having other benefits to reduce mold, odors, dust and other particles in an air stream



ADDRESSING POTENTIAL PITFALLS

MAKE THE MOST EDUCATED DECISION ON WHAT IS BEST FOR YOUR BUILDING



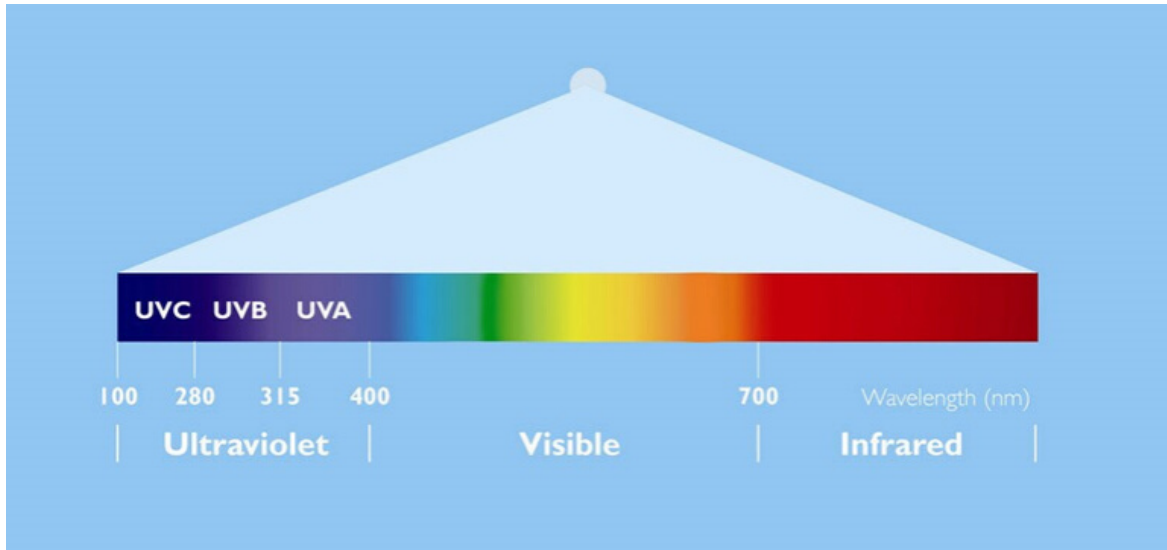
The recommendations are not one-size-fits-all. Understand that all the recommendations are general in nature and are guidelines for building as a whole. Your building and facilities systems should be assessed individually. Only implement the recommendations that work for your system and environment and fit your company guidelines for health, safety and operations."

There is no 'Set It & Forget It.' All recommendations and guidelines set forth by ASHRAE & CDC as well as local governments protocols are meant for constant evaluation. Just as you would with weather changes and adapting to the changing weather climate, your HVAC will need constant evaluation and changes to adapt to your building's health for your people.

Understand your system's capacity. Your building was designed to run systems with specific schedules and employee comfort in mind. As systems begin to run outside of how they were designed, it's important to understand capacity of the system. Increased filtration helps with air quality but if filtration goes too far beyond the system's capabilities, the benefits of added filtration will negligently compare to a malfunctioning system.



ADDRESSING POTENTIAL PITFALLS



MAKING THE WRONG DECISIONS FOR YOUR BUILDING CAN BE COSTLY AND BE A DETRIMENT TO THE HEALTH OF YOUR EMPLOYEES.

Check specifications & fine print.

As we look to start incorporating UV lighting into ductwork and throughout an office, be sure to ask questions and ensure the correct lighting is being installed. UVGI (also known as UVC) is the recommended lighting for sanitization for buildings, no one wants to come home with a nice tan from UV-A lighting being installed.

Evaluate your building

holistically. All your systems are interrelated. Bringing in more outside air will affect your heating and humidity. Changing your lighting schedules may affect your need for cooling. It's crucial to know that all your systems affect one another. Remembering there is no Set It & Forget It.



OPTIMIZING NEW LOADS

NEW HOURS? MINIMAL WORKFORCE? THESE ALL CHANGE THE WAY YOUR BUILDING SHOULD RUN.



If you are running new office hours and schedule, be aware of the following:

Many businesses are running half shifts, shortened schedules, or altering hourly shifts to reduce the amount of foot traffic. These

alterations mean your HVAC and lighting schedules should be altered. Extending heating and cooling schedules to ensure employee comfort during a newly created second shift. As some businesses are returning their people back by department, by mindful of the departments left unoccupied so energy is not wasted in those areas. Limiting your building's scheduled hours is an easy way to reduce energy costs and keep employees safe. If you're unable to do this, consider other solutions to keep your energy costs low.

If your operations are running double time to make up for lost production, consider this:

All recommendations and guidelines set forth by ASHRAE & CDC as well as local governments protocols are meant for constant evaluation. Just as you would with weather changes and adapting to the changing weather climate, your HVAC will need constant evaluation and changes to adapt to your building's health for your people.





NOW IS THE BEST TIME TO INSTALL LED'S IF YOU'RE OPERATING AT LIMITED CAPACITIES.

Use downtime to optimize your energy savings measures. Companies across the country are reducing their capital spending. However, now more than ever might be the best time to implement energy saving measures, such as installing LED lighting or installing VFD's. Many companies have been unable to install new measures due to the opportunity cost of shutting down a production line. If your capacity is limited, now might be a great time to implement energy saving measures to ensure long-term savings.

Regardless of your situation, be sure to bring systems back online in phases.

Large energy systems such as HVAC with compressors, pumps, or fans, conveyor equipment, production equipment, older lighting systems, etc, require a large in-rush current to ramp up to operating speed which can be taxing on an electric distribution system. This can fully load motors for periods of time, creating a power draw much higher than regular operations.

Take a look at your electric bill - if you are on a rate structure that involves a component for current, billing, or historical demand, you are being charged for this spike in start-up power draw. In some cases, the utility can apply a "ratchet" clause on your instantaneous demand charge, meaning the utility will charge you a minimum amount, usually a percentage of your peak demand, for the next 12 months!

The ramifications of just "flipping the switch" when re-entering a facility can be quite large. We suggest staggering the start-up of big equipment by 3 to 15 minutes depending on equipment and utility demand monitoring.



PLANNING FOR THE FUTURE

We'll see a major increase in touchless contact points. From faucets, to doors, to toilets, we expect to see the already increasing touchless technology to expand even more. This technology is highly sanitary and potentially reduces the spread of germs; however, there are also other benefits to be explored. Touchless bathroom appliances reduce the overall water usage while lighting controls reduce downtime in between space usage. Touchless door entry allows for increased security of the overall building. These technologies prove useful, but there's no evidence that these technologies can reduce the spread of the virus. If you're going to install them, make sure you're doing it for the other benefits and not just because you think it'll help slow the spread.

Scalability of systems/designs will be crucial. With such an influx of system capacities and human capital able to be utilized in a space or operations at any given time, scalability must be incorporated into systems. If you're able to run at 50% capacity or 100% capacity, your system should be able to perform and optimize for the situation. This may be a great time to reevaluate chiller types, VAV systems and other expandable system types. If you've considered installing VFDs now might be the best time to integrate them into your building. Not only are VFDs great for switching between different levels of system capacity, they lead to help lower energy costs long-term.

TAKE THE APPROPRIATE MEASURE, DON'T OVERREACT.

With any new changes, it's easy to jump into the quick solutions. Many manufacturers and reps will be pushing hard on products and solutions to ensure the safety and security of your people and building. However, most of these products are untested in the workplace. There is no evidence that these solutions will perform as expected. Keep this in mind. Employee health and safety should be at the forefront of your mind, but make sure the changes you implement are actually making a positive human impact.



PLANNING FOR THE FUTURE

Remote work is going to become even more of the norm.

Before COVID-19, remote work was a luxury given to a select few. Now, it's a requirement to much of the country's workforce. We expect to see remote work expand in the future. At E3M Solutions, several of our team members have been working fully remote for over a year. With the entire team moving remote the past few months, our team was able to stay integrated better than most. We believe in giving our employees the power to set their own schedule. For some, that's working a standard 8-5, but for others that means working more flexible hours in a flexible environment. Working from home doesn't mean not working, it means allowing yourself to better integrate your workflow into your daily living. In the case of COVID-19, allowing your employees to continue working remotely can be one of the safest options.

Returning to your building is an exciting time for some; however, it can be stressful for those that feel that their health and safety is at risk. Make sure to be sensitive to your employees and do what is best for them. As the situation continues, make sure to stay up to date with the latest updates and regulations. We will be updating our blog regularly in order to improve you and help your transition back into working from your building run as smoothly as possible.



BRINGING YOUR BUILDING BACK ONLINE

Unsure where to go next?

NEED HELP OR STILL HAVE SOME
UNANSWERED QUESTIONS?
CONTACT OUR TEAM!



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