NEWSLETTER - JUNE 2020

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TECH TALK

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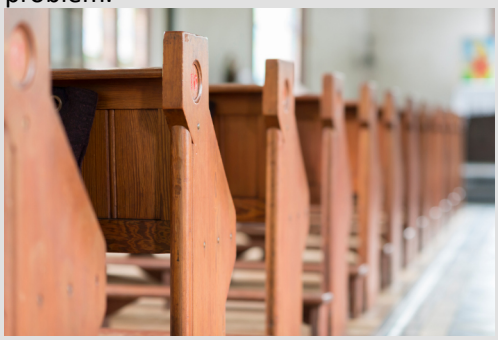
SERVICE CALLS

When a new manufacturing facility began experiencing **poor dehumidification**, MSC was called in to investigate. After noting high chilled water temperature readings of 52-53°F instead of the desired 44°F, we discovered two air-cooled chillers piped in parallel were missing isolation valves, causing chilled water to mix through both units. The resulting rise in AHU discharge air temperatures, in turn, caused humidity levels to rise. Installation of isolation valves solved the problem.



MSC was called in a panic one hot Saturday morning when **temperatures on one side of a church were steadily rising**, and a wedding was set to take place that afternoon. Finding very little air coming from the diffusers, our tech checked static pressure and traced all of the ductwork on the hot side of the church. It turned out that an access door latch had popped open in a rarely-used storage space, sending most of the cool air into the ceilings. Temps dropped back to normal within two hours, just in time for the ceremony.

BACK-IN-BUILDING PREPARATIONS FOR WORKPLACE REOPENING

Proactive IAQ measures to safeguard the health of returning workers

As businesses begin the process of reopening their buildings and welcoming employees back to work, employers are implementing numerous measures aimed at preventing transmission of COVID-19 within the workplace. Interim guidelines issued by the CDC and OSHA include **recommendations for improving building ventilation systems** including increasing outdoor air, upgrading filtration, and running HVAC systems for longer hours to increase air exchanges.

In addition to these effective strategies, MSC also recommends a number of **additional proactive contaminant source control measures**, particularly our three-step Back-In-Building (BIB) process designed to actively improve indoor air quality (IAQ), reduce airborne disease transmission, and instill building occupants with **greater confidence in the air that surrounds them**.

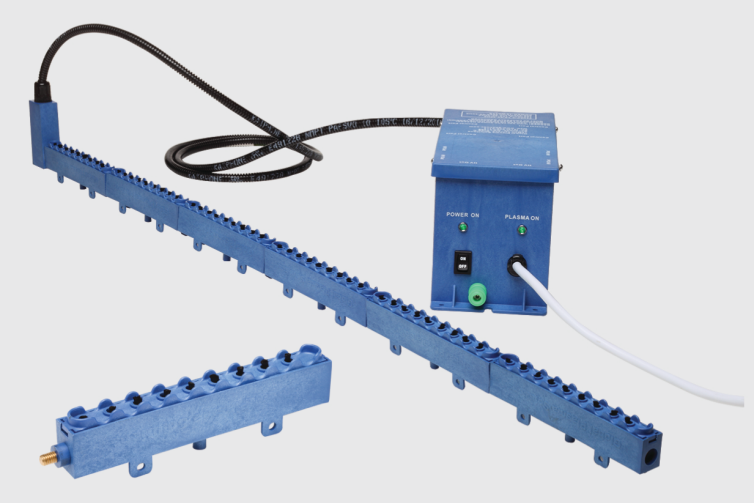
The first step in the BIB process is the **mechanical cleaning of evaporator coils, condensate pans, and air handler interiors** to remove visible dirt, dust, pollen, biofilm growth, and other accumulated materials that can restrict airflow and disperse pollutants throughout interior spaces. Next, evaporator coils, condensate pans, and AHU interiors are sanitized using an HVAC system-safe ***EPA List N: Disinfectant for Use Against SARS-CoV-2***. These products are also proven effective against influenza, rhinovirus, tuberculosis, rotavirus, streptococcus, staphylococcus, E-coli, salmonella, hepatitis, and HIV, as well as mold and mildew.

Once coils and AHUs have been cleaned and disinfected, BIB step three is installation of a proactive air-cleaning system proven effective against airborne pathogens. A notable technology we've installed in our own offices and are recommending to clients is **bipolar ionization (BPI)**. BPI effectively kills viruses, mold and bacteria, reduces airborne particles, neutralizes odors and saves energy by reducing outdoor air intake *(continued on page 2)*

Proactive IAQ Preparations for Reopening Your Building

(continued from page 1)

needs. Millions of positively- and negatively-charged ions are continually distributed via the airstream throughout the building space, where they surround pathogens and mold and deactivate them by removing the hydrogen needed to survive. Airborne particles like dust, pollen and dander become charged and cluster together, increasing their mass and allowing for improved filtration capture. **Needlepoint bipolar ionization (NBPI)** is MSC's preferred BPI technology as it does not produce ozone, unlike traditional corona discharge devices. Though BPI/NBPI has not yet been tested specifically against SARS-CoV-2, it has been proven effective against pathogens that include **human coronavirus 229E, influenza, norovirus, tuberculosis, MRSA, staphylococcus, E-coli, Legionella, and clostridium difficile** among others.



MSC also recommends **ultraviolet germicidal irradiation (UVGI, or UV-C)** as a proven, cost effective method of eliminating microbial growth in HVAC systems and circulated air. By controlling biofilm growth that proliferates in HVAC systems, UVGI coil treatment can substantially restore system capacity, improve IAQ, and reduce maintenance costs. Payback on UVGI systems can occur in as little as six months due to reduced utility costs. Unlike BPI, however, UVGI does not actively treat in-room air, and in-duct UVGI systems are limited due to moving airstream exposure time.

For more information on Back-In-Building preparations for reopening your workplace, or to learn more about BPI, NBPI, UVGI, coil cleaning and disinfection, dilution ventilation, filtration (MERV) upgrade, or photocatalytic oxidation (PCO), reflective electromagnetic oxidation, or any other method of improving indoor air quality, please contact MSC at 973-884-5000.

PM POSTPONED DURING LOCKDOWN? Now is the time to get it done

During ordinary times, HVAC spring preventive maintenance is usually performed in March and April in preparation for the changeover from heating to cooling. This year, however, many businesses postponed PM when the pandemic struck.

Now, commercial buildings are beginning to reopen just as full-on summer weather hits, and many HVAC systems are unprepared for the abrupt need for cooling and an increased necessity for cleaner, safer indoor air. Building owners who put off maintenance during stay-at-home orders should reschedule maintenance with their PM provider as soon as possible, particularly since HVAC contractors may be inundated with maintenance and service calls due to businesses starting up dormant systems all at once.

Important cooling season PM items include the following:

- **Change filters**
- **Check for proper equipment operation**
- **Verify proper damper controls**
- **Clean evaporator coils, drain pans, and condenser coils**
- **Clean and test cooling towers and filtration systems**
- **Flush and blow out chilled water systems, clean strainers**
- **Flush and blow out reheat hot water systems**
- **Check for refrigerant leaks in DX systems**
- **Check economizer programming**
- **Verify that all systems are operating to design intent**

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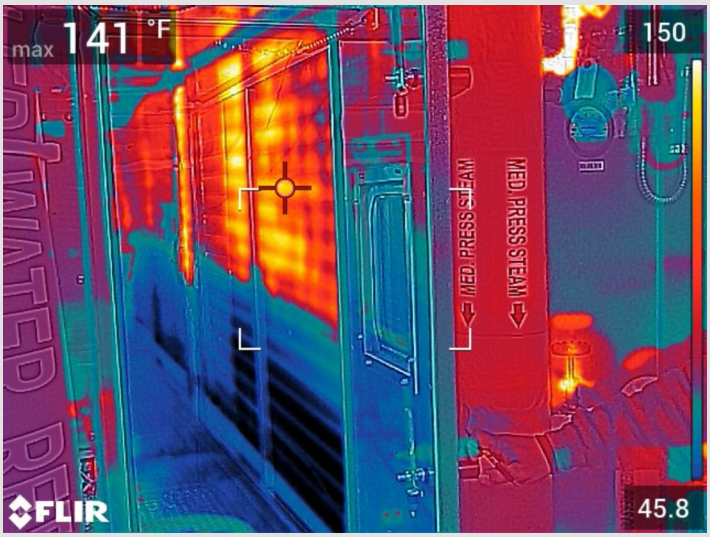
MSC CASE STUDIES

Multiple HVAC Problems Plague Newly-Opened School

A newly-constructed northern New Jersey school was granted a Temporary Certificate of Occupancy at substantial completion, allowing it to open at the beginning of a new school year. Staff and students immediately complained of comfort issues throughout the 100,000 sq.-ft. school, and local officials signaled that a final CO would not be granted until the problems were resolved. When project subcontractors denied responsibility and began pointing fingers at one another, MSC was called in to perform an extensive evaluation of the school's HVAC systems and report their findings in a presentation to all involved parties.

View MSC's objective, in-depth presentation identifying numerous issues, their root causes, and the actions necessary to allow on-time issuance of the final CO.

Underperforming Heating Coil at Large New Jersey Hospital



MSC was called in to examine and diagnose an issue with a steam heating coil located in a lower level mechanical room in a large NJ hospital. The coil was logging condensate and not draining properly, causing nearly half of the coil surface area to remain unheated. Freeze stats had been tripping so often that a hospital maintenance worker had jumped out the safety to stop it from happening. Utilizing a thermal imaging camera and various testing procedures, we determined that space and elevation issues rendered the existing coil and trap incapable of overcoming external pressure drops required to effectively remove the steam condensate.

View MSC's comprehensive Diagnostic Report detailing system specs, testing performed, observations and technical notes, and recommended solutions.

Slow Space Pull-Down and Poor Temperature Control in OR

A hospital reported slow temperature pull-down between surgeries involving surgical teams with different space requirements as well as poor temperature control. Mechanical Service Corporation was called in to determine the cause of these issues and provide recommendations for improving performance. While the equipment proved to be of adequate size and configuration, a number of system deficiencies were identified, the main problem being excessive air volume that did not allow proper heat exchange to occur.

View MSC's detailed Diagnostic Report describing our testing procedures, the problems uncovered, and nine recommendations for effectively correcting these issues.