

SERVICE CALLS

Long-Lead Spare Parts - A mission critical facility called MSC with an urgent cooling problem. Onsite maintenance staff narrowed the issue to a faulty pneumatic chilled water positioner, but replacement parts were three weeks out from their supplier. MSC quickly located the needed parts and had them shipped next-day air, then went a step further by identifying critical long-lead

mechanical parts and ordering spares at minimal cost so the client would have them on hand in case of future emergencies.



Lightning Power Failure - An emergency call came in to MSC when a hospital lost power during a thunderstorm. Emergency power came online within seconds, but backup emergency exhaust failed to start due to loose damper linkage and slightly-undersized actuators. MSC replaced the old, sloppy mechanical linkage with Belimo direct drive actuators.

Two fans were also reprogrammed to both run at 50% capacity under normal operation, then go to 100% if one failed.



42 YEARS & STILL GOING STRONG

In 1976, Gerald Ford was president, disco music was all the rage, and a 23-year-old service technician left his job at Edwards Engineering to start his own business. At first, Mechanical Service Corporation's primary specialty was servicing refrigeration systems used in gasoline bulk sales terminals for hydrocarbon vapor recovery, but they quickly branched out into other areas of process cooling for industries including pharmaceuticals, plastics manufacturing and others. Before long, Harry Hartigan approached his old field supervisor at Edwards, Mike Roberto, to join his steadily growing company. Pete McGrath and Tom Hausleben also joined MSC that year and others, including Paul Natiello and Al Gilbert, joined shortly thereafter. All of these folks are now approaching four decades with the company and many others who have joined since are long-termers.

From the outset, MSC specialized in diagnostics, service, repairs and modifications associated with these specialties. Our vision grew more focused over time as we continued to expand from mainly working with process cooling into HVACR and building automation. Most profits were reinvested into training programs and state-of-the-art tools that most other contractors were only reading about in magazines. Gradually, MSC developed a reputation among engineers, designers, general contractors, and commissioning agents as the industry's go-to troubleshooters, taking on and solving complex problems others could not resolve.

MSC is MSCA STAR-qualified, NEBB-certified, fully-licensed in electrical, plumbing and HVAC, and we are the only specialized contractor of our kind in the Mid-Atlantic and Northeast regions. **Today, 42 years after our humble beginnings, MSC is stronger and better than ever.**



MSC Senior HVAC Technician Jerry Padula

INSIDE...

- 42 Years & Still Going Strong
- Service Calls: Long-Lead Spare Parts / Lightning Power Failure
- Indoor Air Quality & HVAC
- St. Patrick's Cathedral Goes Geothermal

INDOOR AIR QUALITY & HVAC

When people hear about air pollution, we generally think about outdoor air. But according to the EPA, indoor pollutant levels can be two to five times higher – and occasionally up to one hundred times higher – than outside air, including industrial cities.

Considering that the average American spends about 90% of their time inside, indoor air quality (IAQ) can have significant impact on short- and long-term health, comfort, productivity, and even cognitive function of a building's occupants. A 2015 study by the Harvard School of Public Health found that people working in buildings that are "green" and "green+" (with enhanced ventilation) scored substantially higher in nine cognitive areas than those working in conventional buildings. On average, cognitive scores were 61% higher in green buildings and 101% higher in green+ buildings.

Air quality issues come from a variety of sources. These can include improperly-operated and poorly maintained HVAC systems, overcrowding, tobacco smoke, microbiological contamination, outside air pollutants, and emissions from office materials and mechanical equipment. Physical effects can range from mild (eye, nose and throat irritation, headaches, fatigue, nausea) to severe (asthma, respiratory illness, heart disease, even cancer).

The most effective strategies toward improving indoor air quality are contaminant source control and proper HVAC system maintenance. Ductwork and air handlers should be kept clean, and filters should be changed regularly to reduce floating particulates. Determine the appropriate MERV rating for your filters based on the application and particle size of contaminants present. Electronic air cleaners and specialty air filtration systems can also be effective in controlling specific environmental concerns. HVAC systems should be properly balanced, and 15-20% of the air flow should be fresh air. Consider retro-commissioning and upgrading filters and filtration to see how you can achieve a cleaner, healthier indoor environment. Keep humidifiers clean and use fresh, clean water to prevent bacterial and fungal growth. Humidity levels should be maintained between 35-50%.



RENEWABLE ENERGY: Powerful Facts & Statistics

*Renewable energy accounts for 11% of the energy consumed here in the U.S. The breakdown: 2% geothermal, 6% solar, 21% wind, 25% hydroelectric, and 45% biomass.

*Geothermal energy is almost 100% efficient and produces little to no global warming emissions.

*Just 20 days of sunshine can match all of Earth's remaining reserves of coal, oil and natural gas put together.

*Six U.S. states – ID, ND, SD, KS, IA and OK – source more than one quarter of their electricity from wind power.

*Hydropower provides about 17% of the world's electricity, and is the main energy source for more than 30 countries. It is the least expensive renewable energy source in the U.S.



TECH TALK

MSC - THE ONLY TRUE HVAC SERVICE COMPANY - WE FIX IT

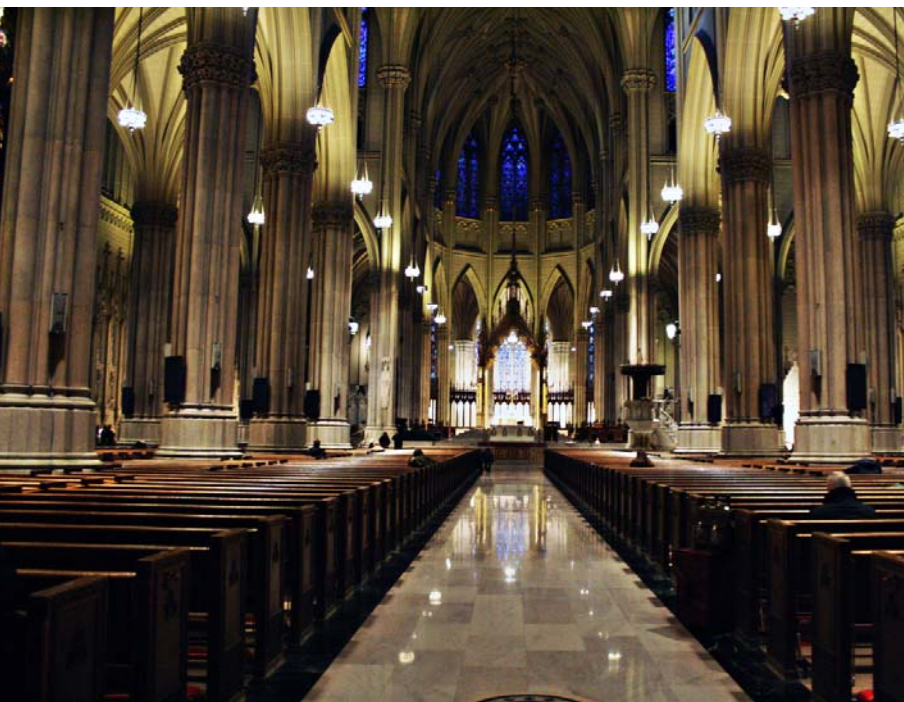
NEWSLETTER - AUGUST 2018

973-884-5000

ST. PATRICK'S CATHEDRAL GOES GEOTHERMAL

Stepping into the hushed comfort of Manhattan's beautiful and historic St. Patrick's Cathedral is an awe-inspiring experience for more than five million visitors each year, no matter the season. Most people are not aware that the 76,000 square-foot interior is heated and cooled by a newly-launched, state-of-the-art geothermal system, the largest in New York City.

St. Patrick's Cathedral's \$35 million geothermal system features ten wells drilled through bedrock to depths approaching 2,200 feet. Groundwater, which year-round maintains a temperature of about 55 degrees, is collected and propelled to a complex geothermal plant housed in a former boiler room beneath the church campus. There the water is cooled to 45 degrees in summer or heated to 130 degrees in winter, then piped throughout the campus to fan coils that distribute heated or cooled air. The church's architectural features were left intact, with all new pipes and equipment hidden from public view.



When the system was designed, engineers couldn't be sure it would work properly in extreme temperatures, so a traditional cooling tower



and natural gas boiler system were installed to provide a safety net, but thus far the geothermal system has handled the load flawlessly since its launch in February 2017. It's still a bit too early to tell how much energy has been saved so far, but the system is expected to reduce energy consumption by about 30 percent annually. That is the equivalent of 94,000 kilograms of carbon emissions, about the amount produced when burning 218 barrels of oil. Geothermal can be somewhat costly for certain applications, but is an ideal choice for a historical building expected to stand for centuries to come.