



COMPLETION DATE

May 2016

PROJECT TEAM

HVAC Contractor:

North Town Mechanical,
Roselle, Illinois

Distributor:

Gustave A. Larson
Company, Chicago

CHALLENGE

Achieving a cool and comfortable environment without damaging the structure of a century-old building

SOLUTION

Mitsubishi Electric VRF

RESULT

An unobtrusive system that offers quiet operation and a comfortable space during the warmer months of the year

Since its inception in 1910, St. Patrick Catholic Church (St. Patrick's) in Lake Forest, Illinois, has been a place for the community to gather. Over time, as the Lake Forest community grew, the **3,900-square-foot building** underwent several structural renovations to accommodate new members and guests. In 2016, after tolerating many years without air conditioning, the church decided to install a new HVAC system in an effort to make the space even more comfortable for the large congregation. It turned to Variable Refrigerant Flow (VRF) technology from Mitsubishi Electric Cooling & Heating (Mitsubishi Electric).

Gianfranco Isaia, the church's facilities and construction manager, said the building needed a new air-conditioning system for one reason: comfort. He said beyond serving the parish community, "our church has become a destination for weddings. We wanted a space that was not only both sacred and contemplative but also comfortable. We have very cold winters and hot, humid summers, and the space had become untenable." The church was able to bear the winter weather with boilers in the basement, but when it came to the humid summers in Illinois, St. Patrick's didn't have air conditioning to create a comfortable environment like it wanted.

Isaia asked the church to install a new air-conditioning system, but with the amount of renovation needed, the church had to seek approval from the city of Lake Forest. To obtain approval from the city, the church needed a system that met three new requirements: The system needed to be unobtrusive, easily installed and whisper-quiet. He said, "Our first goal was to find a system that the city would not see as an eyesore on the exterior of the building. Second, we don't have an attic and the walls are brick so there was no way to

carry ductwork throughout the building. Lastly, it's a church. We needed to make sure the units wouldn't take away from the symbolism that is represented throughout the architecture of the building."

To start the process, Isaia contacted John Domenz, vice president, North Town Mechanical Services, Roselle, Illinois. Domenz would recommend which technology best met the needs of the building and the requirements set by the city. For Domenz, the answer was clear: **"We looked at the interior architecture and available space within the building. The system needed to be quiet and provide comfort, so the best option was VRF."**

He continued, "During services, there are a lot of quiet times, and you don't want the congregation to hear a fan roaring in the background." Isaia agreed with the selection of VRF because the city would approve and the system would provide comfort for the church community. He said, "For the parishioners who come to mass at eight in the morning, we needed to mitigate the problem and provide them a quiet, reflective space."

With VRF selected, the church asked Domenz to investigate the various brands providing the technology, taking into consideration that the selected system also had to meet the installation requirements set by the city. Isaia said, "Since the church is also a historic building, the city set limits on how we could install the system. The city wouldn't allow us to cut many holes in the building." **Domenz proposed Mitsubishi Electric VRF because of its minimal piping and small equipment footprint: "We could install Mitsubishi Electric units in the space without damaging the building's architecture."** Domenz

also recommended Mitsubishi Electric VRF technology because of its superior performance. “We’ve used Mitsubishi Electric products on several other projects in the past, and we’re always sold on the reliability of the systems.” Finally, he noted that if the church needed a back-up heating option, it could use the new system. “The church has two small boilers in the basement, and if they are ever to fail, the Mitsubishi Electric system will provide heat to the space quickly.”

Domenz and his team drafted a base proposal for the church, consisting of two outdoor units and four indoor units. They also offered the option to add a third outdoor unit, which would give the church two additional indoor units – in the front and back entrances. The church was interested in installing the additional outdoor and indoor units, but as with any church, budgets were tight. Still, the original goal had been to provide comfort, and the church’s community members believed so fully in this idea, and were so confident that Mitsubishi Electric VRF would solve their comfort needs, that they donated funds so the third outdoor unit and additional indoor units could be installed.

Despite some inclement weather, Domenz and his team installed the system within six weeks. He said, “The installation happened on schedule and within our set budget.” The installation was also successful from an aesthetics perspective. “The neutral color of the fan coils was a perfect match for the interior walls, and the outdoor units

blended well with the exterior of the building.” Domenz also noted how the distributor, Gustave A. Larson Company, Chicago, provided excellent assistance during installation: “They were great to work with throughout this process. They provided help as we designed the system and set it up in the church.”

Since the installation, the experience has been very positive for St. Patrick’s. Isaia said, “When we unveiled the renovation, including the new [HVAC] units, over 150 people turned out. I had plenty of people come up to me and say how comfortable it was in the church. Since, I have not heard one person say they are a nuisance or obtrusive.

And the units are cooling down the building in several minutes during the hot days. The temperature will drop by 10 degrees in less than 4 minutes.”

Isaia has also appreciated how the system’s whisper-quiet operation contributes to the comfort of the space. He said, “Speaking as a parishioner, when you are in a worship space, there should be a welcoming feeling. That feeling should be comfort. With the addition of these units, our space is both welcoming and comfortable so it makes people want to take the time to reflect.” With Mitsubishi Electric VRF, St. Patrick Catholic Church is now not only a destination for weddings, but a destination for reflection and – perhaps most importantly – comfort.



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- Gianfranco Isaia, facilities and construction manager, St. Patrick Catholic Church



MITSUBISHI ELECTRIC EQUIPMENT INSTALLED

3 PUMY S-Series Outdoor Units, 2 PFFY Floor-standing Exposed Indoor Units, 6 PKFY Wall-mounted Indoor Units