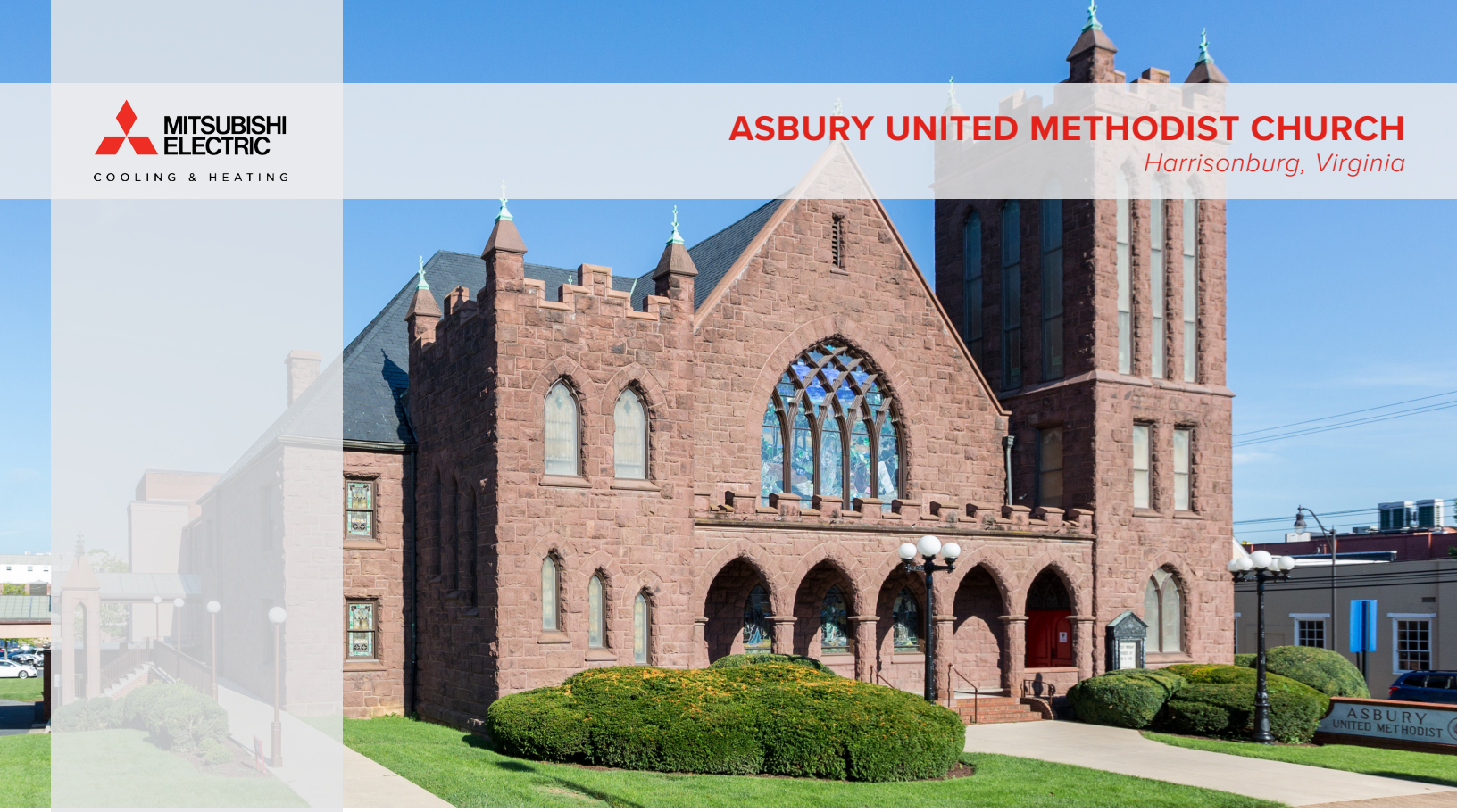
MITSUBISHI ELECTRIC
COOLING & HEATING

ASBURY UNITED METHODIST CHURCH

Harrisonburg, Virginia



COMPLETION DATE

January 2016

PROJECT TEAM

HVAC Contractor
Blauch Brothers, Inc., Harrisonburg, Virginia

Distributor
Advanced Products Group, a division of Aireco Supply, Inc., Laurel, Maryland

CHALLENGE

Achieving comfort and control for a variety of spaces in a century-old stone building

SOLUTION

Mitsubishi Electric VRF

RESULT

Quiet operation, even temperatures and budget-friendly control

The Asbury United Methodist Church (AUMC) has been in operation for 228 years. Its current home in Harrisonburg, Virginia – a **century-old, three-story stone building** – recently underwent a major renovation. As part of the effort to repair and upgrade the entire space, Variable Refrigerant Flow (VRF) technology from Mitsubishi Electric Cooling & Heating (Mitsubishi Electric) was selected for AUMC's education wing, classrooms and outreach room – a total of 23,000 square feet.

The previous HVAC system – two steam boilers, three packaged rooftop units and several split systems – dated back to as early as the 1950s. Unsurprisingly, maintenance had become a big issue. Pastor Bob Talbott, associate pastor, AUMC, said, "We had lots of leaks, and were spending a lot of money on repairs – never mind the thousands on gas every winter to heat. Plus we had temperature issues. When it was zero degrees outside, one room would be cold and in the room next to it we had to open the windows because it was too hot. The a/c was similar, plus those units were very noisy. When they ran, you could barely hear anything over them."

He continued, "We had to replace everything – heating, cooling, plumbing and electrical. This was the kind of remodel where you tear out old ceilings and move the bathrooms around." That challenge offered the opportunity to start fresh – to find mechanical systems that could truly meet the church's needs.

Bill Rees, AUMC's chairman of the trustees, addressed one of those main needs: better control. "We wanted to even out the hot and cold areas via a controls system, making it comfortable for all areas at all times. That control would let us be more efficient with our moneys – if we have a meeting in a room, yeah, we heat it up, but if there's no meeting in the room, we'd rather save the money. **You want to make the most of the moneys that members donate to the church – you don't want it going out the window or up the chimney, per se.** You don't want to spend it all on your building, but more on the missions of your church." Talbott agreed with the need for control, and added that "**quiet operation was another top priority**."

These needs brought the church to VRF. "It was the efficiency and functionality that drew us to it – to be able to control individual rooms, to be able to schedule and change the temperature based on the comfort of the folks in the room," said Rees. The church put out a design-build request; Blauch Brothers, Inc., Harrisonburg, won the project.

Winston Rhodes, PE, design engineer, Blauch Brothers, said, "The classrooms average 800 square feet, and they're used for a variety of purposes – as a music room, meeting room, nursery, classroom, even occasional housing for the homeless. **So the church needed a long-term solution that was low-maintenance**." Rhodes agreed that VRF was the right solution. "Take VRF's ducted unit, for example. It's quiet. It has a filter. You can't see it or hear it. And it's efficient and offers control for each room" – everything AUMC wanted.

As part of putting together his proposal, Rhodes investigated the various VRF brands. "We'd done Mitsubishi [Electric] P-Series over the years and feel

it's bulletproof, especially compared to the mixed results we've had with other brands, but this was our first VRF. **I asked a lot of people – technicians, owners – about brands. Based on those conversations, Mitsubishi [Electric] was the most dependable equipment out there.** We wanted the best – the least number of problems – because we want a happy customer, and because the design and installation are on us. Mitsubishi [Electric] was clearly the most field-proven; it has all the kinks worked out as the most mature product in the VRF line."

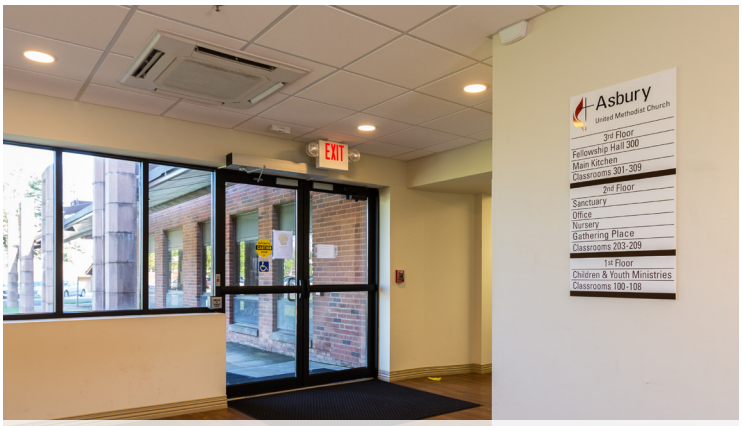
Working with Mitsubishi Electric also meant working with the Advanced Products Group, a division of Aireco Supply, Inc., Laurel, Maryland. Rhodes said, "Our distributor has a great depth of knowledge. They've done VRF for a number of years, and they have guys who do the nuts and bolts from start to finish. I went to their design class, our guys have gone to their service center and they reviewed my design."

The installation was completed on schedule and on budget, and the experience since has been very positive. "Everything just hums along," said Rhodes. Talbott noted the humming is only figurative, since the Mitsubishi Electric units are extremely quiet: "**We are really happy with the noise level. You can be in a classroom and not know when the heating comes on at all. We just don't hear it in the rooms.**"

Another thing not heard at AUMC now: complaints. Rees joked, "If you don't hear about something in a church, that means it's going well. So not getting complaints about the HVAC means it's going great. No problems."

Talbott is also satisfied by the increase in control with the Mitsubishi Electric system. "We really can control each room. We can turn each room up or down." Rees explained that this operation takes place from "a controls center in our main office. But each room also has a thermostat that can be adjusted up or down within a preset threshold. The preset threshold helps us stay on budget."

Rees said, "The system has performed nicely given the variety of uses. Our education wing is used every day – morning, afternoon and evening. The big spaces are used, and the small classrooms are used. So it's a variety of uses at a variety of times, and the Mitsubishi [Electric] system is performing very, very well."



"There was really low headroom on the job. The floor-to-floor is 10 feet. We worked to keep that as big as possible, so we went for units that blow across long and wide rooms. We also ran all the refrigerant piping through an old elevator shaft. VRF let us make the most of a tight space."

- Winston Rhodes, PE, design engineer, Blauch Brothers

MITSUBISHI ELECTRIC EQUIPMENT INSTALLED

2 PUHY Y-Series Outdoor Units, **4** PURY R2-Series Outdoor Units, **17** PEFY Ceiling-concealed Ducted Indoor Units, **7** PFFY Floor-standing Exposed Indoor Units, **2** PKFY Wall-mounted Indoor Units, **21** PAC Simple MA Remote Controllers, **1** AG-150 Centralized Controller