Project

Name
Crocus Hill Victorian Home

Location
St. Paul, MN

Completion Date
July 2014

The Team

HVAC Contractor
Apollo Heating
Oakdale, MN

HVAC Distributor
Ferguson Enterprises –
Heating & Cooling

Fujitsu Equipment

(3) ARU9RLF Slim Duct Units
(1) ARU12RLF Slim Duct Unit
(1) UTPPU03A Branch Box
(1) UTPPU03B Branch Box
(1) UTPSX248A Separation Tube
    Assembly
(1) AOU48RLXFZ1 Condensing Unit

FUJITSU

Halcyon

Keeping Aesthetics

This Victorian style home was built in 1914 in St Paul's prestigious Summit Hill neighborhood. In the 1880's and 1890's the Crocus Hill and Grand Hill neighborhoods, two residential sections of Summit Hill, became fashionable locations for the wealthy families of St. Paul. The Summit Hill neighborhood is featured in St Paul's yearly Parade of Homes due to the rich history and beautiful homes. This private residence is 6,602 square feet, 3 stories, 7 bedrooms and 3-1/2 baths.

Design Challenge

There were two main challenges that made the installation design unique. The first was correcting the current system that had design and installation flaws. This system had a dual boiler system with the third floor having an air handler that was installed incorrectly. The air handler only had one return for the entire system. Also, the ductwork in the system was partially missing or broken. The dual boiler system provided heat but made significant heat spots throughout the home. For example, the kitchen would often climb to 85°F. Whenever the outside temperature got below 5 degrees, the second boiler would kick on and just stay on. Since there was no thermostat on that second zone, the temperature would continue to climb.

The second challenge was the home's original aesthetic design. It was important to the homeowner to keep the walls and ceiling made out of plaster intact. Careful and diligent work was extremely important to keep the integrity of the home.

Registers from a Slim Duct unit are shown above, installed in one of the bedrooms. Below, just a minimal amount of flexible duct, the line set and electrical line run through the attic space.

Solution

Apollo Heating is very familiar with the Fujitsu brand, which is their preferred brand when dealing with design challenges that require unique and customized installation. There are two main reasons that Fujitsu was chosen for this job.

This job called for a more versatile piece of equipment that could be custom designed to perform at a level that exceeded the homeowner's expectations. Fujitsu resolved that issue.

Second, now that the kids have grown up and moved out, there are only two

people residing in the home. However, visits from friends and family are common thus, sectioning the top level into four zones was important to increase the comfort of the guests present at the home.

Results

The benefits gained were as follows:

- Energy efficiency
- Increased comfort by introducing zoned heating and cooling. Eliminating those hot spots was enjoyed greatly by the homeowner.
- Keeping the integrity of the home's aesthetics was a huge benefit. All you can see are the grates from the Slim Duct units.
- Window units could now be removed.
- The decibel rating at which the units perform was important to the owner and has exceeded their expectations.

Customer Testimonial

"This is the best investment we've made for our house. I wish we would have done this 15 years ago. The system is very quiet and we like that the units are hidden throughout the house, which preserves the originality of the house" – Jill Harmon, Homeowner

Keeping the original aesthetic design of this 1914 Victorian style home was important to the homeowners.

> **"This is the best investment we've made for our house. I wish we would have done this 15 years ago."**
> **– Jill Harmon, Homeowner**

One outdoor condensing unit, AOU48RLXFZ1, was able to connect to the 4 indoor Slim Duct units.

Below, the home's original dual boiler system provided heat but made significant heat spots throughout the home. The installation of the Slim Duct units provided consistent heating and cooling throughout the spaces.