

Edgewood, Georgia

## DAHLGREN HOME

### CHALLENGE

A green builder wanted to renovate a 1925-built home for energy savings and high indoor air quality

### SOLUTION

Mitsubishi Electric Zoned Comfort Solutions®

### RESULT

A comfortable, energy-efficient home earning the EarthCraft Certification's Health Badge



Edgewood, Georgia, a neighborhood on the east side of downtown Atlanta, is home to many craftsman-style bungalows. Originally developed for blue-collar workers in the early 1900s, today's contractors and developers are finding new life for these homes, modernizing them while still keeping their original charm. That's what local builder Joe Thomas decided to do when he came across a home with potential on Dahlgren Street.

"The home was built in 1925. I wanted to take the existing structure and do a high-quality renovation to a green building standard," explained Thomas, owner, Elemental Green Homes. With plans to achieve certification from EarthCraft, a green building program, Thomas wanted to take energy efficiency and whole-home building design to the next level. Working with Mitsubishi Electric's Performance Construction Team, he selected Zoned Comfort Solutions® for the project.

### THE SET-UP FOR HIGH PERFORMANCE

After buying the lot in July 2018, Thomas immediately got to work changing the structure of the home for a more seamless and spacious design. "The home is a ranch style, originally 1,000 square feet with two bedrooms and one bathroom. We added on a master suite, bumping it up to 1,600-square feet," said Thomas.

Next up, his team focused on securing a tight thermal envelope for the home to reduce loads for the mechanical systems. "We gutted the house to the studs. We left the original siding on and insulated everything from the inside," said Thomas. "We created an air barrier inside the existing wall cavities and then we insulated them as well as the foundation walls with closed cell spray foam. The roof line was insulated with open cell spray foam."

When it came time to design the HVAC system, Thomas had a few

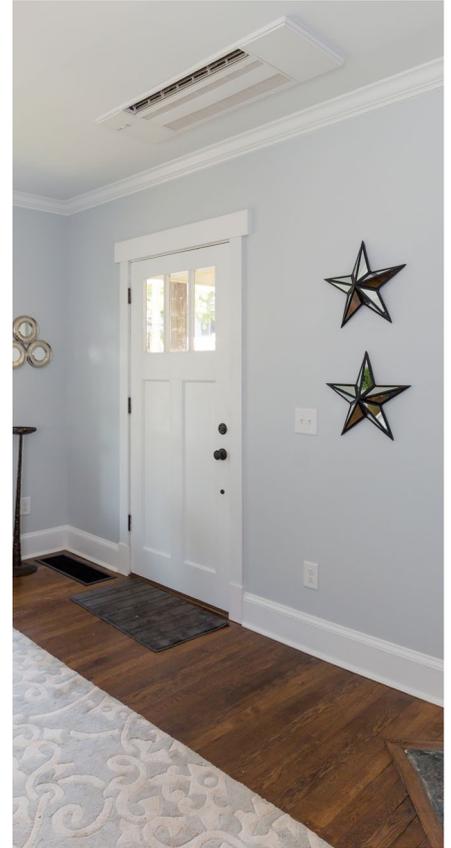
options. As a spec property without a homeowner attached yet, he could install either centralized heating and cooling or install a variable-capacity, split-ductless system. After running into Performance Construction team member Rob Howard at an industry event, Thomas was sold on the technology and efficiency of Zoned Comfort Solutions.

## DIVING INTO DUCTLESS

"I had limited experience with Mitsubishi Electric HVAC equipment and had never designed a whole home around ductless systems," explained Thomas. "That said, the Mitsubishi Electric brand has been around the longest in the ductless space. Between Rob and the sales rep, Ryan Burrell, I trusted their expertise. They both made a visit to the home and reviewed the space on a 1:1 scale. Even though the home was already ducted, they knew mini-splits would be practical for the project."

The mechanical contractor, Canton Heating & Air (Canton), was also excited about partnering with Elemental Green on the HVAC selection and installation. As an Elite Diamond Contractor®, Canton is specially-trained to design, install and maintain Mitsubishi Electric HVAC systems. "We exclusively sell Mitsubishi Electric. When we started selling variable systems years ago, I knew Mitsubishi Electric was going to be a high-demand product," said Richard Poag, president, Canton. "Now, we're installing them in commercial buildings, houses, every single day."

For this home, the HVAC layout came from the Performance Construction team, incorporating a hybrid ductless and ducted design featuring the SEZ Horizontal-Ducted Indoor Unit and one of Mitsubishi Electric's latest products, the EZ FIT® Recessed Ceiling Cassette.



**/// We've installed a lot of EZ FITs. I try to offer it on every job we do. They're very installer friendly. I'm actually putting three EZ FITs in my house this week. ///**

**— Richard Poag, Canton Heating & Air**

## THE EZ FIT® RECESSED CEILING CASSETTE

"The EZ FIT is a ductless ceiling cassette that sits flat on the ceiling of a room," explained Poag. "Canton installed the first EZ FIT in the state of Georgia. We are selling more by the week; they are getting very popular because they don't disturb the look of the room and they work really well. Our clients love the air vane feature that allows you to swing the airflow from left to right."

Thomas agreed. "I think the EZ FIT is brilliant. It's safe to say that one of the deciding factors for choosing mini-splits for this home was the aesthetic of the EZ FIT units. As a spec home, we're always trying to appeal to potential buyers," expressed Thomas.

With the house divided into three heating and cooling zones, Canton installed an EZ FIT on each end of the home and an SEZ to condition the center of the home. The result is an energy-efficient, comfortable atmosphere.





## HYBRID HVAC DESIGN AND SAVINGS

“In this project, the hybrid approach was ideal. The two EZ FITs do most of the cooling and air is circulated through the SEZ,” explained Poag. “The units work together and that’s best for the occupants. For example, a couple could use the EZ FIT to condition their bedroom while they sleep while the other units are adjusted down since the other zones aren’t in use. There are so many advantages of a hybrid system.”

The Mitsubishi Electric Performance Construction team also specified

a third-party ventilation and dehumidification system to help bring in fresh, outside air, providing healthier indoor air quality for future residents. Another benefit for the future homeowners: a quality warranty.

“Since Canton is a Diamond Contractor, the homeowner gets a 12-year warranty on the compressor and parts for the registered HVAC system,” said Poag. “It’s a win-win

for all parties involved whether they be the contractor, installers or the customer. That’s why we enjoy working with Mitsubishi Electric.”

The house went on the market in April 2019 and Thomas is confident the home is a solid representation of what Elemental Green Homes stands for: comfortable, energy efficient and healthy. The home met his goal of being EarthCraft certified and even achieved one of their newest honors: the Health Badge, recognizing outstanding indoor air quality. Because of the measures Thomas took to ensure low energy loads and savings, Elemental Green is also projected to receive two rebates through Georgia Power: \$1,100 through their Home Energy Improvement Program and \$750 for the HVAC systems since the outdoor unit is over 16 SEER.

Through a conscious effort to renovate the Dahlgren Home, the future homeowner is sure to reap the benefits of Thomas’ work.

## PROJECT TEAM

### Builder:

Elemental Green Homes, Atlanta, Georgia

### HVAC Consultant:

Mitsubishi Electric Performance Construction Team

### Mechanical Contractor:

Canton Heating & Air, Ball Ground, Georgia

## EQUIPMENT

- ▶ (1) MXZ M-Series Outdoor Multi-Zone Heat Pump
- ▶ (2) EZ FIT® Recessed Ceiling Cassette
- ▶ (1) SEZ Horizontal Ducted Indoor Unit
- ▶ (3) MHK1 Wall Thermostats