



Seattle, Washington

## VIEW HAUS 5



Aaron Leitz Photography

### CHALLENGE

Finding an HVAC system with a low enough load, a small enough footprint and high enough efficiencies to help the project meet Passive House standards

### SOLUTION

A multi-zone heat pump system from Mitsubishi Electric

### RESULT

View Haus 5 earned multiple energy-focused certifications, including Passive House

“With the View Haus 5 project, developer Cascade Built wanted to be a game-changer – to do the absolute best. They wanted to make the most comfortable, energy-efficient homes out there,” said Tadashi Shiga, principal, Evergreen Certified, Seattle. Shiga served as the View Haus 5 project’s third-party verifier for programs like Built Green, HERS and Northwest ENERGY STAR. Key to earning these impressive certifications is what Shiga described as “a three-legged stool of heating/cooling, thermal envelope and ventilation. The legs must be perfectly balanced to meet high standards.” The View Haus 5 HVAC system that makes a perfect balance possible is a multi-zone heat pump system from Mitsubishi Electric. Shiga described it as “the now and the future of HVAC.” For View Haus 5, the now and the future are incredibly bright. The country is abuzz with talk of View Haus 5’s many accomplishments, especially its status as the Seattle area’s first passive multifamily building.

Sloan Ritchie, Cascade Built’s president and founder, led the project, setting

out to create a comfortable and sustainable community. “This was about designing homes that would offer happy, healthy living. People shouldn’t have to worry about utility bills and they shouldn’t have to suffer from asthma and allergies. This is about good living.” That’s a concept Ritchie stands by; his family lives in a Passive House that Cascade Built developed “to test the concept before I starting building them for other people.” Passive worked – and well – so along came the View Haus 5 project.

The project started with a difficult plot of land. Bradley Khouri, principal and founder, b9 architects, Seattle, designed the homes. He said “the plot is small and slopes significantly, so we really had to design to fit location.” The homes’ configuration around a central courtyard and their individual orientations were all about southern exposure: “The solar axis is critical for energy use and balance.”

The resultant community features five homes that each get good sunlight and a fantastic view of the Cascade Mountains. Each also features century-



old, reclaimed barn wood; LED lighting; walls over a foot thick; zero-VOC paints; locally made cabinetry; and airtight, tilt-turn windows. In short, they're sustainable inside and out. Each home is also different, due to individual designs ranging from 1,100 to 1,700 square feet in size.

That small size, combined with the goal of passive design, meant that "we needed the most efficient HVAC system out there, and the one that could handle a low energy load," said Ritchie. Ritchie knew a multi-zone heat pump would be up to the challenge, and Khouri supported the idea: "We're using these systems in a bunch of projects. The local energy code is very strict; using heat pumps is an easy solution."

Ritchie added, "I chose Mitsubishi Electric, specifically, because I'm familiar with their product. Their systems offer high efficiency and ease of install, and they have great service." That energy efficiency was necessary to achieve the various green certifications

that View Haus 5 aimed for, especially Passive House. "If you don't have a high-performance heating and cooling system, you just can't meet these standards," said Shiga.

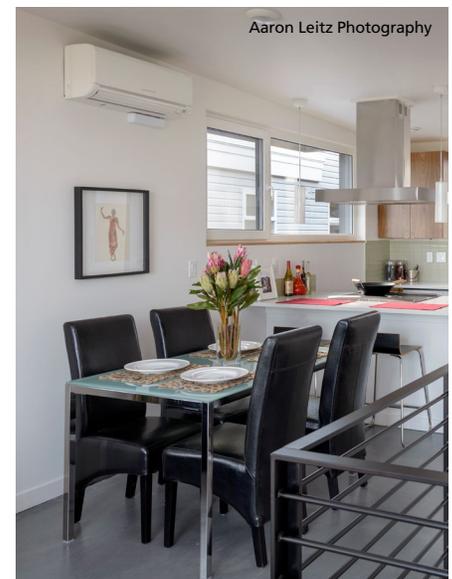
Shiga explained that "Mitsubishi Electric products were also chosen because of how quiet they are. When you're building a super energy-efficient house, everything is magnified – including sound. View Haus 5 has triple-pane windows and ROXUL®, an excellent insulator. This makes it really quiet inside. When you have a serene interior, you don't want a noisy HVAC system."

"Noise is equally important outside of the home," Shiga continued. "In Seattle, we have requirements for how noisy outdoor units can be. We're tight on space in Seattle. Your neighbors are five feet away. Mitsubishi Electric's outdoor units are very quiet, which helps with permitting."

With the HVAC system selected, installation took place. "It was easy and took minimal installation time," said

Ritchie. Indoor units were placed "as needed throughout the project without taking up floor space," said Khouri. "I think they're great for uses like this because of their small size. And they provide incredible performance for such a small device."

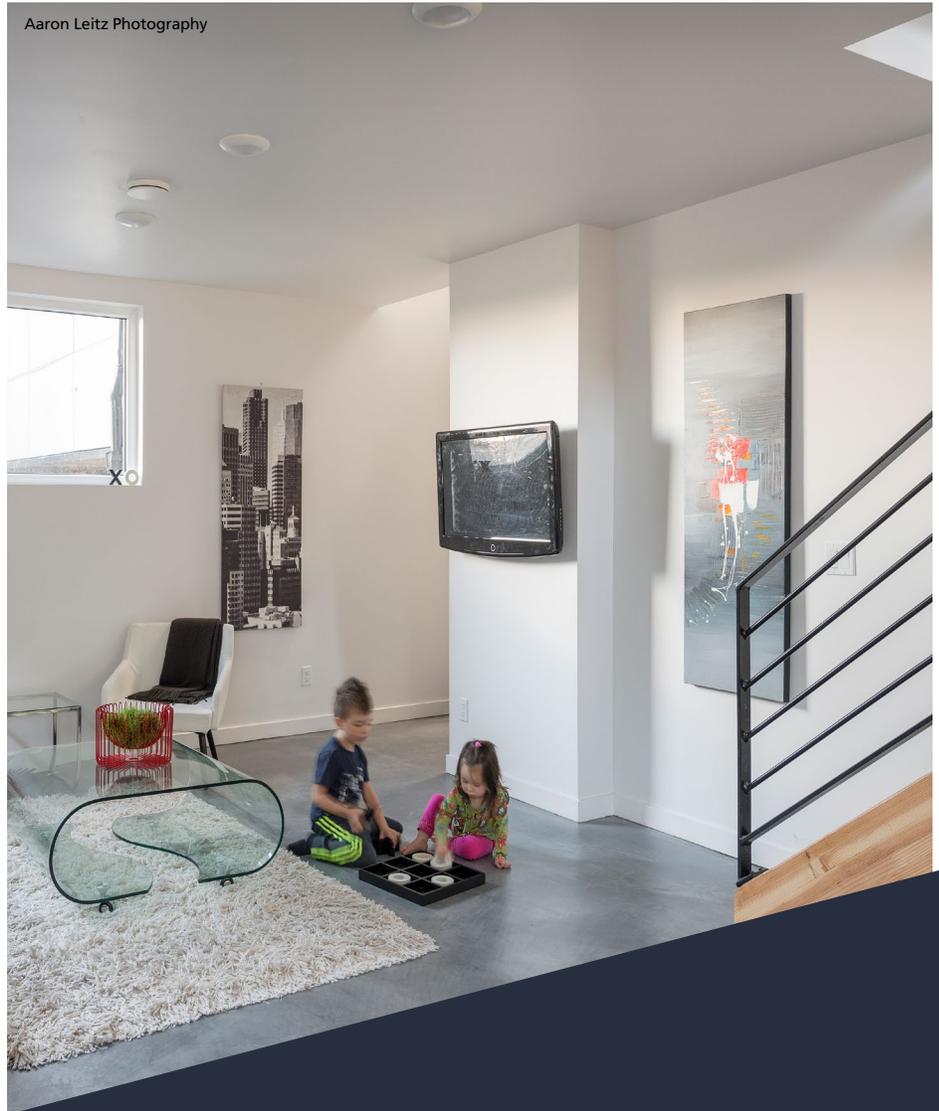
That performance is indeed incredible. Zooming in on one of the project's



**Project Completed:** December 2014 |

five homes – a two-bedroom end unit with 1,431 square feet of conditioned space – Cascade Built was thrilled to see a HERS Index of 47. For that unit, the estimated annual energy cost is just \$35 for heating and \$28 for cooling. The U.S. Energy Information Administration’s most recent energy survey shows Washington residents pay an average of \$547 a year for heating and \$73 for cooling. That makes the View Haus 5 unit’s yearly energy expenditure a tenth of its non-Passive neighbors’.

Shiga said, “It’s very exciting that these Passive Houses are 90 percent efficient. That’s like getting a 90 percent off coupon on your utilities for as long as you own your house.” Shiga is also excited about what this project means for the rest of the community: “View Haus 5 is Cascade Built’s vision of what the perfect home should be. I believe it’s the right way to build. I also believe this is the true beginning of passive for the U.S.”



## PROJECT TEAM

**Developer:**

Cascade Built, Seattle, Washington

**Architect:**

b9 architects, Seattle, Washington

**Distributor:**

Gensco, Tacoma, Washington

**Third-party Verifier:**

Evergreen Certified, Seattle, Washington

## EQUIPMENT

- ▶ (5) MXZ Outdoor Units
- ▶ (5) MSZ Wall-mounted Indoor Units
- ▶ (5) SLZ 4-Way Ceiling-recessed Cassette Indoor Units
- ▶ (5) MHK1 Wireless Remote Receiver Kits (Wall-mounted thermostats)