



Pax Futura

Passive Apartments

Pax Futura Passive Apartments



Participant information
Premier Building Systems
Becky Susan
1420 Washington Avenue
Puyallup, WA 98375

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Category
Multifamily

High Performance: No

Project information
Pax Futura: Passive Apartments
3700 Hudson
Seattle, WA 98118

Date Completed: June 2018

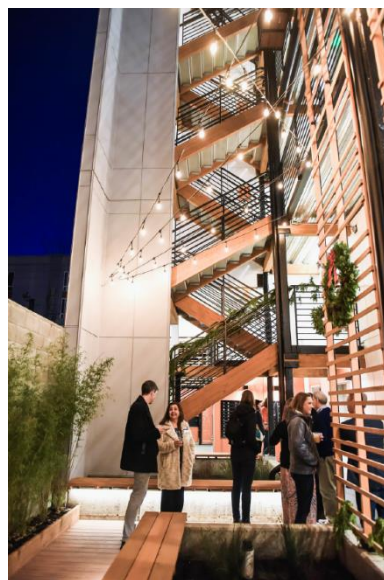
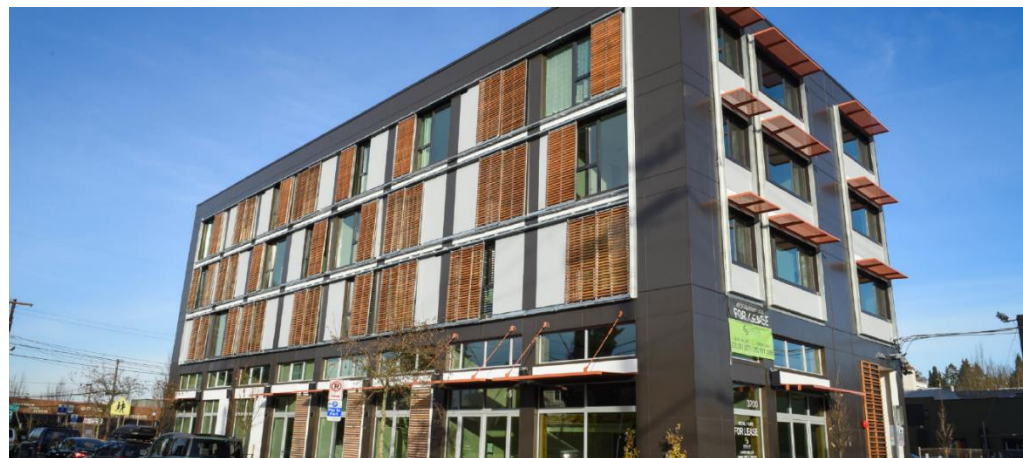
Total cost of project (exclusive of land): \$5.75 million

Dimensions of building (all floors of multi-story building):
4 Stories, 35 Apartments

Total sq. ft. of conditioned space: Not provided at deadline

Built By (if different than applicant)
Cascade Built
Sloan Richie
4111 E. Madison St. #104
Seattle, WA 98112

Panels Manufactured By
Company Name (members only): Premier Building Systems



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Designed By
NK (Nationally recognized passive architect)
Premier Building Systems
1420 Washington Avenue
West Seattle, WA 98375

Total sq. ft. of conditioned space: Not provided at deadline

Describe the end use of the building: Apartment Building designed to use up to 90 percent less heating and cooling energy than standard buildings. The project is believed to be the first passive house apartment building in Washington State and demonstrates how high performance, sustainable living can scale, enabling us all to reduce our role in climate change and become part of a climate solution.

How did SIP construction help you get this job? Heating, cooling and powering buildings is a leading cause of greenhouse gas emissions. Passive house buildings use very little energy and are common in Germany and Scandinavia. Pax Futura (Pax means peace in Latin, and Futura is the name of a font created to express modernity) was designed & built to use up to 90 percent less heating and cooling energy than standard buildings. A tight and efficient envelope was critical to this deliverable,

SIP wall thickness and core material: 6" GPS Core Walls
SIP roof thickness and core material: n/a

Describe the benefits of using SIPs on this project. Did SIPs help save time, labor, construction costs, or energy? Extra insulated walls, without thermal bridging, enabled the structure to better control the flow of air (hot and cold) to meet Passive standards. The goal was 90% savings on energy and SIPs were a critical component to this. SIPs also provided superlative comfort in a draft-free, temperate interior environment (along with the carefully designed HRV system).

Describe any innovative design elements or structural engineering involved: The envelope design included a thoroughly engineered envelope system including extra-thick walls and energy recovery ventilation, to best exchanges air inside a building and uses it to precondition incoming outdoor ventilation air - cooling it in warmer seasons and warming it when it's colder. Cascade predicts the cost to build passive is about 5% higher than a similar non-passive project.

One goal of the project by the Cascade Built (who has also developed & built a passive townhouse project and is starting a passive condo project near Pikes Place market in Seattle) is show people that passive house design is viable.

Please list any certifications the project received, such as ENERGY STAR, LEED, National Green Building Standard, WELL, Passive House, Green Globes or local green building programs. Only list certifications that are completed: The project is also Built Smart emphasizing resource conservation, Passive standard achieved (certificate not received by deadline) Net Zero Energy building

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HERS Index (required only for High Performance Category and recommended for residential projects): Not provided by deadline.

Blower door test results (ACH50) (required only for High Performance Category and recommended for residential projects): Not provided by deadline.

Energy use intensity in kBtu/ft² (required only for High Performance Category and recommended for commercial projects): Not provided by deadline.

Describe the HVAC system used on the project: Reduced HRV provided continuous, filtered fresh air, and contributed to a comfortable, temperate interior environment,

Describe any other energy-saving materials used in the building envelope other than SIPs. List U-values of windows used and the U or R-value of any insulation materials. (judged only for High Performance Category) High performance windows and doors. Specifics not provided by deadline.

Please list any energy-efficient products or design features, such as lighting, hot water heating, appliances, passive solar (judged only for High Performance Category): With Pax Futura, Ritche/Cascade Built knew tackling hot water, the largest single consumer of energy on the project, was critical & worked with Edwards Mother Earth Foundation (EMEF) to design and install a passive Solar hot water heating system reducing the energy used to heat water for showers, laundry, dish washing by 75%. The success of the system demonstrates the scalability of the technology as a solution for widespread adoption to help curb fuel consumption by buildings.

Were any solar panels installed on the project? If so, indicate the size of the system (judged only for High Performance Category): Yes. Both for energy generation and hot water heating. Specifics not provided at deadline.

Please list any sustainable materials or design features not listed above, such as recycled materials, low-VOC finishes, landscaping, etc. (judged only for High Performance Category): > No VOC finishes

> Natural bio-retention planters to manage storm water onsite.

> Exterior sliding wood screen elements shields units from west-facing solar exposure, keeping units cool during warm months.

> Exposed wood surfaces throughout interior, exterior and courtyard areas blended with modern aesthetic

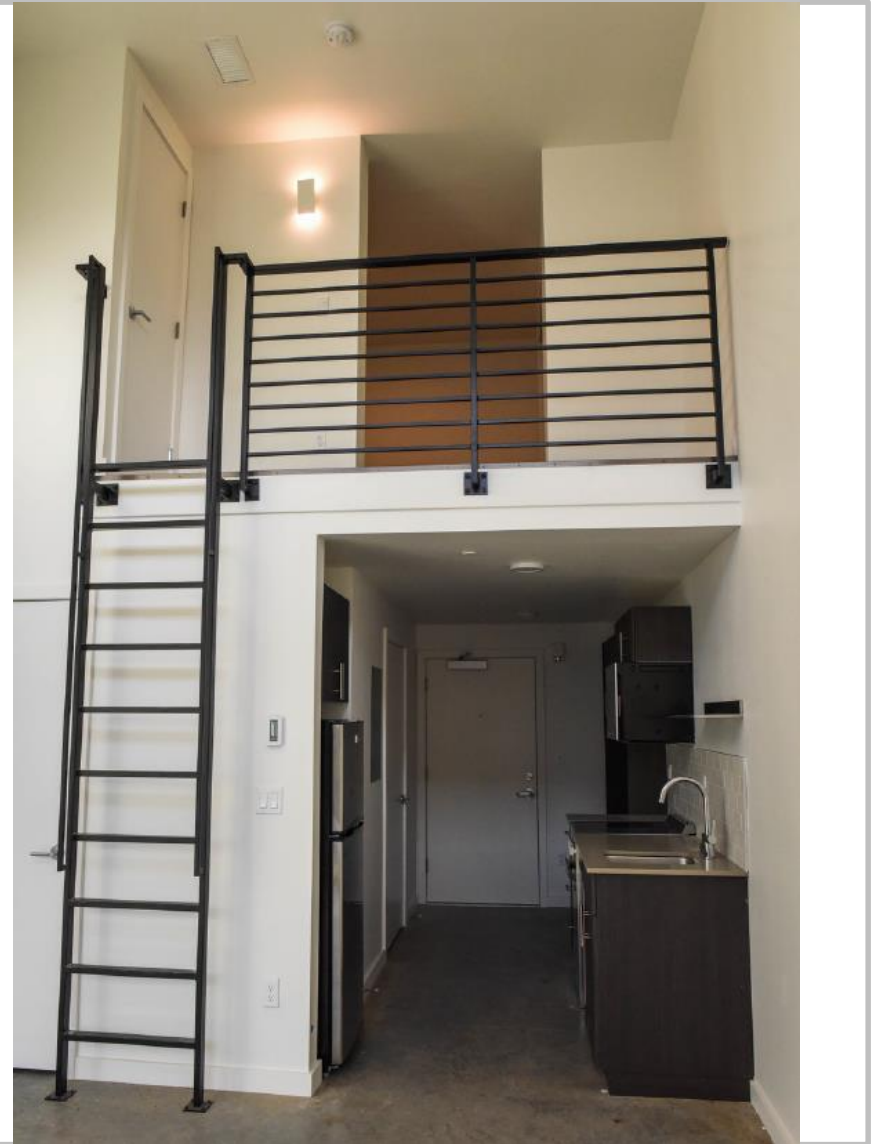
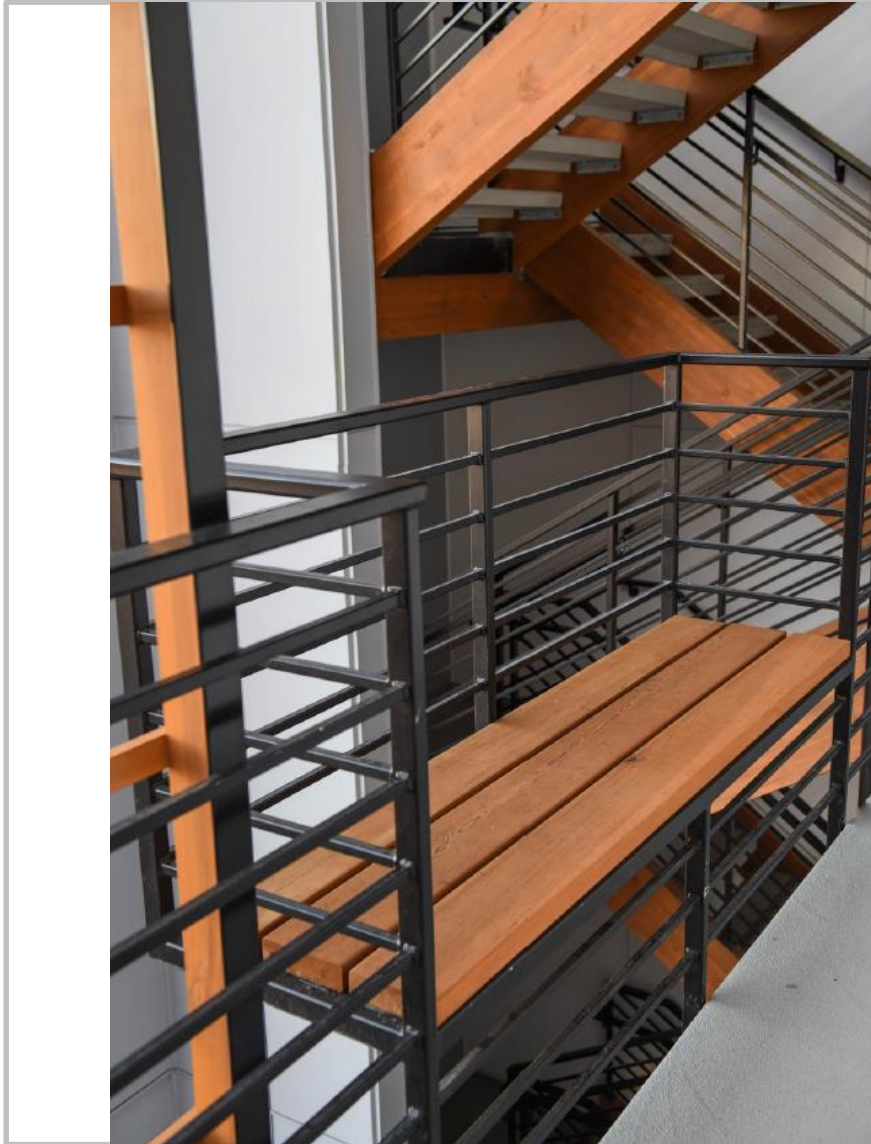
> Solar orientation & eaves

Any additional comments on the project: Heating, cooling and powering buildings is a leading cause of greenhouse gas emissions. "I personally think building in this fashion is important. To me climate change is the issue of our time," said Ritchie.

www.livepaxfutura.com Apartments in Pax Futura are small, ranging from 270 to 464 square feet. In addition to 32 apartments, there are three live-work units.

There were just over 1,200 passive house residential units in the U.S. last year, according to Passive House Institute US, compared to 25,000 passive houses in Europe eight years ago, according to a New York Times report.

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Exterior front view

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