



Pax Futura

Seattle's first Passive House apartments

Description:

Located in the heart of Columbia City's vibrant retail corridor, the project is named to reflect the developer's belief that a peaceful future can be achieved through innovative design for energy conservation. Residents in the 32 studio and one-bedroom apartments and three live/work units benefit from healthier living with continuous, filtered fresh air, superlative comfort in a draft-free temperate interior environment, and increased quiet and security from the high-performance windows and doors.

The four-story multi-family apartment building designed by NK Architects is one of the first projects of this size in the northwest to target Passive House certification. As a result, Pax Futura consumes up to 80% less energy to heat and cool the units than standard buildings and uses durable materials and construction techniques that will last for future generations.



Special Feature:

As developer Sloan Ritchie strived to reach Net Zero with Pax Futura, he knew tackling hot water, the largest single consumer of energy on the project, was critical. A grant from Edwards Mother Earth Foundation provided Pax Futura the funds to install a solar hot water system to serve the building, reducing the energy to heat water for showers, laundry, dish washing by 75%.

Project Information:

Location	3700 Hudson Street, Seattle WA
Number of dwelling units	35
Total heated SF enclosed	15,526
Average SF size of each unit	405
Bicycle parking for	19



SIPS (Structural Insulated Panel) Wall Assembly

EUROtek triple-pane UPVC windows

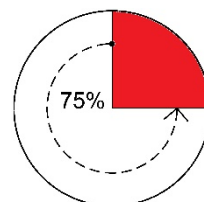
Balance ventilation with Heat Recovery

Six Zehnder ComfoAir500 units

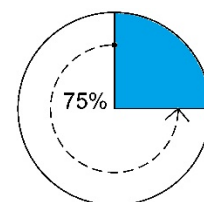
Modeled Energy Performance:

EUI Energy Use Index 22 kBtu/sf/year

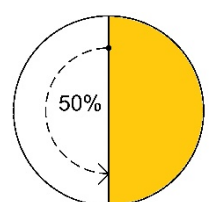
Reduction from Energy Code performance up to 50%



HEATING
energy reduction



HOT WATER
energy reduction



TOTAL BUILDING
energy reduction



Project Team:

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- Nicholson Kovalchick Architects
Principal-in-Charge
Joe Giampietro, AIA, CPHC
Project Architect
Lauren McCunney, AIA, CPHC
Design Architect
Brittany Porter, AIA, CPHC

PHIUS+ Building Consultant
Dan Whitmore, CPHC – RDH Building Science Inc.
PHIUS+ Energy Modeler
Skylar Swinford, Energy Systems Consultants
PHIUS+ Verifer
Tadashi Shiga - Evergreen Certified LLC

MEP Engineer
Galen Staengl, PE, Staengl Engineering

General Contractor
Sloan Ritchie, Cascade Built
Mechanical Contractor
Cascade Comfort Systems


Structural Engineer
Panos Tochalakis, PE, Yu & Trochalakis Engineers


Civil Engineer
Leonardo Difrancesco, LD Engineering LLC


Landscape Architect
Joseph Garel, True Scape Design

Surveyor
Brent Eble, Emerald Land Surveying, Inc

Geotechnical Engineer
William Chang, Geo Group Northwest, Inc









Building System Information:

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- | | |
|---|----------------|
| SIPs walls provided | R-28 |
| Premier Building Systems – Todd Bell
no added material cost | |
| Windows provided | U-0.20 |
| EUROtek Windows & Doors – Dori Caro
25% cost premium | |
| Heat Recovery Ventilators | efficiency 85% |
| Zehnder – Small Planet Supply
Six (6) Distributed throughout the building | |
| Heat Pump ventilation air tempering | COP 3.0 |
| Chiltrix Heat Pumps | |
| Solar Hot Water system | |
| Silk Road Environmental
with backup gas fired boiler | |



Cost Premium:

Because the developer was committed to achieving PHIUS+ certification, the project team employed an Integrated Design Process (IDP) at project inception.

As the general contractor, Cascade Built estimates the additional construction cost premium of the project’s Passive House elements at 5% higher than a 2015 WSEC code compliant building.

The result is 50% better energy performance plus better health and comfort. The project will comply with the projected 2031 energy code and, with the addition of Renewable Energy Credits (RECS), will be a Net Zero site.