

SUSTAINABLE PROJECT OF THE YEAR

REACH CDC'S ORCHARDS AT ORENCO

by Wendy Culverwell

Owner: REACH Community Development Corp.
Address: 6520 N.E. Cherry Drive, Hillsboro
Budget: \$14.56 million

Key Partners: Passive House Institute US; Ankrom Moisan Architects Inc., Portland; William Wilson Architects, Portland; Walsh Construction, Portland; Housing Development Center, Portland; Green Hammer, Portland; Washington County Housing Authority

When the Orchards at Orenco apartment complex debuts in June, it will be one of the most energy-efficient, multifamily buildings in the country.

More important, it will offer striking evidence that affordable housing and green building go hand in hand.

"It's a great project. It's very exciting. It's the largest one," said Michael Knezovich, spokesman for the Passive House Institute US, the Chicago-based nonprofit popularizing the European program to drive extreme energy efficiency.

Orchards at Orenco is the largest apartment project in the nation designed to Passive House standards.

It is the brainchild of REACH Community Development Corp. The Portland nonprofit owns and manages nearly 1,900 residential units in Multnomah, Washington and Clackamas counties. Collectively, they serve 2,500 tenants.

A majority of its tenants earn 40 percent of the area's median family income, about \$36,750 for a family of four, as calculated by the U.S. Department of Housing and Urban Development.

REACH conceived the 57-unit Orchards to meet the Passive House Institute's standards for energy efficiency. The design means the Orchards will use as much as 70 percent less energy than even a building certified by the U.S. Green Building Council's LEED program, one of the most rigorous in the nation.

Passive House, which originated in Germany, promotes extreme energy efficiency through designs that consider local conditions and all but eliminate air leakages through walls, windows and

doors. Unlike LEED, which prescribes which materials and approaches to take, Passive House only asks that projects meet its energy goals.

Choosing the Passive House approach added about 10 percent to the project's \$14.5 million cost, said Dan Valliere, REACH chief executive officer.

Valliere called it money well spent on a building REACH will own for decades to come. It used its own funds, as well as a \$500,000 grant from the Meyer Memorial Trust, to pay the added cost.

The result: Its low-income renters will pay less for heating and power. And REACH expects the upfront investment in higher-quality construction to pay off in lower maintenance and repair bills down the road.

"Sustainable building is both good for the resident and for the building," he said. "It's more durable. It's going to last longer."

Most innovations will be unseen to residents and their visitors.

- ▶ 12 inches of insulation in the roof is four times that required by Oregon's uniform building code.

- ▶ The 10-inch, insulation-filled wall cavity is two-thirds deeper than the 6 inches required.

- ▶ Four inches of foam under the ground floor helps complete the seal around the building envelope and prevent drafts.

- ▶ Heat recovered from stale air in kitchens and bathrooms will warm fresh air headed to bathrooms.

- ▶ Triple-glazed, argon-filled windows



1 Orchards at Orenco will debut in June and is the largest apartment project in the nation designed to Passive House standards.

2 The sustainable materials used in construction will pay off in lower maintenance and repair bills in the future.

close tighter than typical windows, preventing leaks.

- ▶ The building's position and light exterior color both are designed to make the most of winter sun while blocking it in the summer.

Valliere said the biggest challenge of pursuing Passive House lay in its newness, relative to the better-known LEED program.

"We were fortunate that there were others who went just before us that we could learn from" he said.

Another challenge: Since the building is sealed against drafts, it needs a sophisticated ventilation system to

keep fresh air circulating for residents.

"There are some high-tech air exchange systems. It makes the air very clean because it is exchanged every day, essentially," he said.

REACH will replicate the Passive House standards when it begins work on the second phase of the Orchards project this year, but it likely won't seek certification.

"We will use construction methods that make it durable and efficient. (Not getting it certified) takes a little of the pressure off," he said.



MICHAEL KNEZOVICH
 Communications director for
 Passive House Institute US

Are affordable housing developers really interested in green building?

At our organization we are seeing a sharp uptick in interest in using Passive House as the standard in the way of building affordable housing. The Pennsylvania Housing Finance Authority, which approves projects for Low-Income Housing Tax Credits, puts it in their RFP and gives bonus points.

Doesn't it add a premium to the cost?

Not always. The perception about a premium for Passive House, in particular, is that it is substantial. What we're finding again and again is that on multifamily projects — especially larger residential ones — the premium gets lower and lower. A New York project with 24 units had no premium at all.

Why is green building a good thing?

It smooths out fluctuating utility prices and lowers bills. And for operators of these things, it's also good; it's usually a nonprofit. They tend to be comfortable and well built, and there's a resilience factor.