

Better Buildings

Developer Jim Winkler strives to build beyond the standard formula

By Ann Grim
Oregon Department of Energy

After 25 years in commercial real estate development, Jim Winkler has survived his share of marketplace highs and lows. But this businessman doesn't see the dollar sign as his only measure of success. He has chosen to move beyond the standard formula that gets the most return for the least cost. He seeks to build a better building.

"This isn't rocket science," said Winkler. "And, it's not a radical agenda. We are taking a series of small 'digestible' steps to make our projects environmentally friendly so we'll all benefit down the line."

Winkler recently completed Troutdale Terrace, a 14-acre, 228-unit affordable housing complex in East Multnomah County. The units are available to renters whose income is 60 percent of the county's median income or under \$39,480 for a family of four. The monthly rent is approximately \$100 less than comparable apartments in the area. Troutdale Terrace cost \$22.5 million to build and has a 95 percent occupancy rate.

Winkler specified energy-efficient appliances; high efficiency water heaters; extra insulation; double-paned, low-E, argon-filled windows; efficient shower heads; and fluorescent lighting for each apartment. Tenants' utility bills are estimated to be 35



Developer Jim Winkler (left) and Architect Shawn Sullivan discuss their next project. Photo courtesy of the Oregon Department of Energy.

percent less than they would have been with standard appliances, code windows and insulation.

"These are working families. And, it's not a good time for a poor working family," said Winkler. "I believe it is morally imperative to supply them with energy and resource-efficient apartments. I want them to spend their money on their children and not have to pay it to the utility company."

"Jim Winkler is unique as a developer," said Oregon Department of Energy Analyst Charlie Stephens. "He looks at the total cost of housing and not just the cost of the rent.

He actively searches for ways to improve a building so that it works for him and for the people living in it."

Before the Troutdale project began, Winkler called a meeting with Architect Shawn Sullivan, Portland General Electric Earth Advantage Consultant Glenn Waer and Stephens. He wanted to ensure that he would use the latest technology and make the most impact for the cost.

"We were looking for what really worked," Winkler said.

They discovered that their greatest impact for the least cost would be to install:

1) fluorescent lighting and energy-efficient appliances; 2) energy-efficient water heaters (hot water use is the single biggest energy cost for an apartment); and 3) insulation and energy-efficient windows that exceed code.

"We thought we would install on-demand water heaters," said Sullivan. "But, it didn't pan out."

Heat recovery

The technology that did make a difference was a heat recovery unit called a Gravity Film eXchanger or GFX unit that extracts heat from water used for showers. The plumbing device replaces a section of vertical drainpipe with an all-copper heat exchanger. It has no moving parts and requires no maintenance.

As hot water from a shower goes down the drain, it goes through the heat exchanger warming the incoming cold water supply that is in a separate coil. It is

estimated that between 40 to 50 percent of the heat can preheat the cold water supply so the water heater doesn't have to work as long to get it up to temperature. With a 50 percent transfer, residents could save 2 kWh or 14 cents per 12-minute shower. If 400 people take one shower a day, the potential savings are more than \$21,000 a year. Troutdale Terrace is the largest project in the nation with the GFX technology.

Just the increased insulation and above-code windows reduced heating costs by 27 percent.

Troutdale Terrace was reviewed for the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) certification. Analysts determined that it would qualify for a Silver rating, but Winkler opted not to apply for it.

Energy Tax Credit

Winkler's project did qualify for a 35 percent Business Energy Tax Credit from the Oregon Department of Energy. The eligible project costs amounted to

\$313,000. With estimated energy savings of 2,167 kWh per unit per year, the payback period is estimated to be about eight years. Winkler received a tax credit of \$109,000 that reduces the payback period to about six years.

Winkler sees more opportunity for energy savings if tenants turn off lights and turn down their thermostats at night. "The little stuff," he said.

"We have a tremendous opportunity to become a national and global leader in energy conservation," Winkler said. "But the government and the merchant are not the drivers. The consumers are."

Winkler and Sullivan are working on more projects. They have an affordable apartment complex under way in Tillamook that duplicates the Troutdale project. Winkler also has a vision for a downtown Portland project that will incorporate a "flex" car for residents to share.

Ann Grim is with the Oregon Department of Energy.

Business Energy Tax Credit

The Oregon Department of Energy's Business Energy Tax Credit Program offers a tax credit of 35 percent of the eligible costs for investments in energy conservation, recycling, renewable energy sources and alternative fuels.

The eligible costs are the additional costs of exceeding the energy code or standard practice by 10 percent. All projects must have a simple payback of one to 15 years.

Project owners must submit applications for the Business Energy Tax Credit before a project begins. More information can be found on the Department of Energy Web site at www.energy.state.or.us or by calling toll-free 1-800-221-8035 or 503-378-4040.

Energy, resource efficiencies at Troutdale Terrace

Each unit at Troutdale Terrace has:

- Extra wall, attic and floor insulation (R-60 in the attic)
- Fresh air vents
- Additional caulking and sealing
- Double-paned, low-E, argon-filled, energy-efficient windows
- Energy efficient electric 50-gallon water heater
- Gravity Film Exchange (GFX) heat recovery unit that preheats cold water with warm water from the shower
- Energy-efficient and tax credit-eligible front-loading clothes washer that uses less water and spins clothes drier so they need less time in the dryer resulting in lower energy bills
- Energy-efficient and tax credit-eligible refrigerator
- Energy-efficient dishwasher
- Interior and exterior fluorescent light fixtures that will not take standard incandescent lighting (this reduces energy consumption up to 70 percent)
- State-of-the-art shower head designed to use less water (two gallons per minute) without lowering water pressure
- Drought-resistant plantings and limited grass areas to minimize water use and maintenance costs
- Five recycling stations