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South Winthrop Work-Live project, courtesy Case Design & Project Management.

## Does green building make cents? It depends

Two new studies offer conflicting views

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Developer Tony Case isn't looking for a quick payback on his ambitiously green building plan.

"Because we are thinking about hanging onto the building for the long term, we really felt like it's in our long-term interest to create as sustainable a building as we can," Case, the owner of Seattle-based [Case Design & Project Management](#) said Tuesday.

Case [plans](#) to build a four-story building with five apartments and six live-work units at 2705 S. Winthrop St., in the Rainier Valley. More interestingly, he plans for it to meet a strict set of green-building requirements, including that it produces at least as much energy as it consumes, reuses the water that falls as rain on the site for toilets and laundry, offsets the carbon footprint of its construction, uses local materials, diverts nearly all construction waste from landfills and includes "design features intended solely for human delight and the celebration of culture, spirit and place appropriate to the function of the building."

There are at least 60 proposed Living Buildings in design or under construction in North America, including Case's project and a [house](#) under construction on the Eastside.

A new [study](#) says the [Living Building Challenge](#) criteria pay back their added cost within a reasonable period in most cases, compared with buildings with [Leadership in Energy and Environmental Design](#) Gold certification, which is the second-highest level in the U.S. Green Building Council's rating program.

Another new Washington [study](#), however, says new green schools do not save enough energy to recover their extra costs.

The Cascadia Region Green Building Council's created the Living Building Challenge in 2006 in "the belief that our society needs to quickly find a state of balance between the natural and built environments," according to the challenge [guide](#).

"The Living Building Challenge is attempting to raise the bar and define the most advanced measure of sustainability in the built environment, using a benchmark of what is currently possible and given the best knowledge available today," it says. "Projects that achieve this level of performance can claim to be among the 'greenest' anywhere, and will serve as role models to others that follow."

The new Living Building Financial study tries to put a price on the challenge by calculating how much more it would have cost to build nine different types of LEED Gold buildings in four U.S. cities to Living Building standards, and how much those buildings would save in the long run.

The study looked at [different types of buildings in different climates](#), with Portland coming closest to Seattle. It found that Portland had a slightly higher energy use than warmer cities like Phoenix and Atlanta, but its lack of extreme temperatures and relatively abundant rainfall saved on systems, reducing the extra cost.

A university classroom building in Portland would have cost 4 percent to 9 percent more, with payback in two to seven years, the study found.

"The combined impact of Portland's mild climate, plus existing and upcoming incentives for green building and net-zero energy projects, make the incremental costs almost zero," study manager [Lisa Petterson](#), of SERA Architects, said in a news release.

The biggest cost premium in Portland was 29 percent to 34 percent for a low-rise office building, with payback taking 25 to 30 years. Five of the nine Portland buildings would have an expected payback within about 15 years.

"Some people have thought this idea was 'pie in the sky' and unachievable," Jason McLennan, chief executive of the Cascadia council and the author of the Living Building Challenge, said in a news release. "But the study clearly demonstrates that we can increase green jobs, greatly enhance our energy security, and most effectively utilize federal stimulus money by constructing Living Buildings, especially for those in the public sector where taxpayers are going to own and operate a building for the long-term."

But [the other new study](#) questions the wisdom of extra spending to make schools green.

Schools built to the energy efficiency standard of 2005's state "High Performance Buildings" law cost about 6 percent more than other new schools, but: "In virtually every school district, there was at least one non-green school that used less energy per square foot than buildings that met the standards passed four years ago," wrote [Todd Myers](#), director of the [Center for the Environment](#) at the Washington Policy Center.

"In Tacoma, where supporters touted the energy savings of Giadrone Middle School, the building has consistently used about 30 percent more energy per square foot than another Tacoma middle school built the same year but without mandated green standards," he wrote. "In Spokane, none of the three 'green' elementary schools are as energy efficient as Browne Elementary, built in 2002, prior to passage of the 'High Performance Buildings' law. This is the pattern elsewhere as well."

Even in schools that do save energy, he wrote, "the energy savings are too small to cover the higher initial construction cost."

Much of the savings that advocates of green measures tout is compared with older buildings, those erected to minimum standards or ones with different uses, not with similar, recently built structures, Myers wrote. "Those comparisons are not useful in understanding the true benefits of spending taxpayer dollars on these projects."

The report comes as the Legislature is considering a [bill](#) that would ask voters to authorize the state to issue up to \$3 billion in bonds to pay for safety, health and energy efficiency improvements to public schools, colleges and universities. Repayment would come, in part, from the saved energy costs.

"Some investments may make sense, like ground source heat pumps. Other costs will never be recovered, like purchasing solar panels, because the cost-recovery period is longer than the life of the building," Myers wrote. "Others may cost more, like increasing fresh air and air circulation, but have other beneficial impacts like improving indoor air quality. Without an analysis of the costs and benefits, simply spending money on energy projects does not guarantee future savings."

Case said he hoped to meet the Living Building standard with an added cost of 10 to 15 percent and did not know how long it would take to recoup the extra spending.

"We just wanted to make sure we got a competitive rate of return on our investment, and it does do that," he said.

The fact that Case isn't sure he'll end up making more money off a Living Building shows that, for him, it's not just about the savings.

"The bottom line has to be there, but ultimately we want to do that right thing," he said.

Case also hopes having a different product will help his project stand out in a tough economic environment. He's still looking for more funding and City Council approval of a proposed zoning change to allow more density around light-rail stations, but hopes to start construction in the summer of 2010, with the building opening a year after that.

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