

N O R T H W E S T BUSINESS M O N T H L Y

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Green building: The future starts now Innovation, necessity drive 21st century building practices



Wild things in the heart of downtown Bellingham: John Blethen's Creekside Building has the largest green roof north of Seattle.

By John D'Onofrio

We've all heard the one about the frog.

You know the story: a frog placed in boiling water will jump out immediately and save himself while the frog placed in water that is gradually heated to boiling will become, well, a poached frog. When it comes to consuming resources, we've been a lot like the frog in the slowly warming pot, enjoying the bath for a while but gradually, beginning to get a bit ... warm.

Perhaps nothing else we do affects this situation more than the buildings we construct. When you consider design, construction and operation of buildings accounts for 20 percent of U.S. economic activity and 40 percent of energy used, it's easy to see potential for positive change is enormous – both environmentally and economically. Indeed, it's not too great a stretch to imagine green building and retrofitting existing structures to improve their "greenness" will be one of the great economic drivers of the new century.

Green building is a concept in its infancy. The seminal U.S. Green Building Council, founded in 1993, and the LEED standard (The USGBC's Leadership in Energy and Environmental Design rating system) has only been with us since 1998. Yet in this short span of time, green building practices have spread like wildfire. The USGBC now boasts more than 15,000 members. In 2006 alone, more than 172,000 new homes qualifying for the Environmental Protection Agency's Energy Star designation were built nationwide – this accounted for more than 12 percent of all new site-built, single-family homes permitted. We've got a long way to go, but this much is certain: green building has moved from boutique to mainstream, seemingly overnight.

Many Shades of Green

Generally speaking, green building practices incorporate energy efficiency, water conservation, waste minimization, pollution prevention, the use of resource-efficient materials and improved indoor air quality. As you would expect, there are degrees of "greenness." The USGBC's LEED certification (available at varying levels) has thus far applied primarily to commercial or institutional buildings, rating projects based on factors such as site selection, water and energy efficiency, material and resource usage, indoor environmental quality, innovative design and others.

Whatcom Educational Credit Union has built three LEED-certified buildings in Whatcom County. "At WECU we view green building as a social responsibility issue," Vice President/Chief Operations Officer Robert Langei says. "As a vital part of this community it is our goal to preserve resources for future generations and to encourage building practices that do the same. The end result of implementing LEED design requirements is a building approximately 35 percent more energy efficient than one constructed using conventional building practices."

Up until now, the LEED program has been problematic when it comes to residential construction. Its stringent requirements regarding reporting and verification have made it too expensive and complicated for widespread residential use. Change may be on the horizon. According to Dave Christensen, owner of Christensen Design Management in Bellingham, the USGBC is currently evaluating a LEED residential pilot program that promises to be "much simpler and less expensive."

Until this new certification is available, residential construction can qualify for the Built Green designation, available in one- to five-star ratings or the Federal Energy Star designation, administered by the EPA. Neither certification is nearly as comprehensive as the LEED designation and in fact, the lower Built Green ratings of one to three stars require no verification at all. Still it's a start.

Aiki Homes, a longtime green builder in Bellingham, participates in both programs. "Energy Star has its own merits for being a national program that works with utilities to provide financial incentives and great technical help," says Aiki's Rose Lathrop, a LEED accredited professional. "[The Built Green program is] a great local program helping builders enter into the green building industry, constantly raising the bar in terms of the level of green, and helping to educate builders and the public on priorities of green building." These programs, while not perfect, serve a valuable purpose in raising consciousness in the industry.

"As green building becomes more widely used, it's important for these programs to keep pushing builders to achieving greater sustainable building practices," Lathrop says.

Not all builders are bullish on the certifications. Rick Dubrow, owner and "First Hammer" with A-1 Builders says his company doesn't get involved with certifications. He says he has yet to have a potential client ask for "certifiable" green construction. Although A-1 does mostly remodeling, where certification is not such an issue, Dubrow believes "greenness" of a project is relative. "I assess how green our client is and try to get them to make greener choices," Dubrow says.

Passion and Pragmatism

Ted Clifton, owner of Clifton View Homes in Coupeville is passionate about green building. Recently honored by the National Association of Home Builders (NAHB) for his accomplishments in energy-efficient construction, Clifton is an evangelist for the green building cause.

"I have been a green builder for most of my adult life, but we didn't have a name for it until recently," he says. "As the chairman of the SICBA (Skagit-Island County Builders Association) Built Green program, I was sent to the National Green Building Conference in Albuquerque in March of 2006 to take the pilot version of the Green Building for Building Professionals course. Among other things I learned while taking the course was that I already was more advanced in my own building practices than almost anyone else in the room, including the instructor. I applied to NAHB to become an instructor for the course, and since September 2006 I have taught the class about 15 times in four western states. About one in 10 of the CGPs (Certified Green Professionals) across America have come through one of my classes."

Clifton believes we may have reached critical mass with respect to awareness of green building. He cites a recent national poll he says, "Showed a majority of potential home buyers were asking for green features, and were willing to pay more for them."

Clifton pointed out very few green building products are "inherently green," although engineered wood products conserve forest resources.

"We have engineered wood trusses, which use smaller lumber to span longer distances," he says. "Plywood and oriented strand board are ways of using fast-growing timber species to create very strong sheets of material for a variety of purposes. [Modern resin technology] uses principally the same resins that come out of the tree itself, and has made many of these products possible."

Other technological developments have created new opportunities for builders, including structurally insulated panels and insulated concrete forms.

"These two methods represent ways in which the shell of a home or building can be constructed using far less forest resources than conventional stick-framing would use," Clifton says. "They also result in far tighter structures that are more energy efficient." Clifton sees resource conservation as vital.

"A truly green home will have used fewer resources to produce, which can actually reduce the cost of production," he explains. "A Green Builder will also re-use or recycle any products that would otherwise have gone into the waste stream. By impacting less of the ground around the house, there will be less damage to the soils, which in turn will contribute to groundwater quality, and the ability of the soils to recharge our precious aquifers, from which most of us derive our drinking water."

Going Green in an Economic Downturn

The current recession is creating opportunities for green builders, according to Clifton. The downturn "may be the death of the non-green home," he says. "I find many builders taking advantage of the market slowdown to get more education on the subject and join our Built Green program, so that they'll be ready when the market heats up again. Americans don't want their father's Oldsmobile, and they no longer want to buy their father's oldsmohouse either," he says.

Lathrop concurs. In light of the economic climate, "I think more builders are looking for ways to distinguish themselves and see green building as a sector with a growing market and want to jump on board," she says. "It has also taken out some builders that might have been using 'green'

as a marketing strategy without really understanding what that means or employing those practices, separating the boys from the men, so to speak.”

But will Americans pay more for green construction? “Every economic model I have done shows that when packaged correctly, Built Green methods pay off,” Clifton says. “Energy savings are often substantial enough to pay for the indoor air quality improvements, and resource efficiencies pay for themselves.”

Dubrow agrees. “Some green building techniques cost more, some don’t,” he says. “If you incorporate green building into your design the design will drive the greenness.”

Christensen says he believes consumers need to understand the long-term costs associated with different building methods. He cites as an example the issue of indoor air pollution, a problem identified by the EPA as one of the top five health risks facing Americans. In commercial or institutional buildings, “employee costs are higher than any other factor, and in LEED-certified buildings disability claims significantly drop off while productivity goes up 25-35 percent,” he notes.

The government, of course, is a major player in the adoption (or obstruction) of green building practices. Christensen is convinced that the federal government needs to step up and “introduce substantive incentives to help encourage long-term thinking.”

According to Dubrow, an over-abundance of bureaucracy has presented challenges. “Government is in the way,” he says. “Government codes and regulations are clearly the biggest barriers to success in building green.”

Clifton agrees government needs to start taking a more long-term approach, affording builders more predictability. “Congress still needs to extend the Energy-Efficient Home tax credit for more than just one year at a time,” he says. “They don’t seem to understand the dynamics of the builder’s economic situation. It takes several years from conception and budgeting of a project to final production and sales of the homes. A one-year-at-a-time tax credit strategy does nothing to include them, and they are the ones who really need to get on board if we are really going to make a meaningful change in the way this country builds homes.”

LEEDing the Way

Sustainable Connections, a local nonprofit organization representing more than 600 local business and community leaders, is working to find ways to create win/win partnerships between government and the private sector and to reduce obstacles faced by green builders. Since its inception in 2002, the organization has worked with both government and the private sector to create opportunities for local green builders and to raise community consciousness about the environmental and social benefits of green building. And according to Christensen, they’ve been remarkably effective.

“Sustainable Connections has played a very significant role in raising awareness,” he says. “Much of the progress that we’ve seen wouldn’t have happened without them.” As an architect, Christensen reads up to 40 trade journals a month and each of them is now producing a “green” issue. In looking at various efforts around the nation, he observes that Whatcom County “outshines most places in the country” and attributes much of the credit to Sustainable Connections. “They’ve had a huge impact on the consciousness of both the city and the port,” he says.

Recognizing that the government/private sector synergy would benefit from getting everyone on the same page, Sustainable Connections has recently kicked off its ambitious Five/12 Project. The initiative aims to reduce real and perceived barriers to green building by creating at least five

tangible green building success stories over 12 months and creating a sense of momentum toward fewer green-building barriers and more incentives in 2010.

Sustainable Connections staff worked with the city of Bellingham to identify five specific goals that could be adopted this year and also to develop a survey intended to gather input from local green builders with an eye toward identifying areas of focus to advance green building efforts.

A Local Success Story

John Blethen is a long-time advocate for green building practices and other environmental causes. Blethen owns New Whatcom Interiors, a cabinet making business he started in 1979. He also owns commercial and residential real estate, including the Creekside Building in Bellingham, home to the largest green roof north of Seattle. Covered with 6,000 sedum plants, the green roof stabilizes temperatures inside the building and reduces storm runoff into nearby Whatcom Creek by at least 70 percent. In addition to the sedums, the roof also features a vegetable garden, weather station (to help gather data about the effects of eco-roofs) and has become a nesting site for birds.

Next door, he has been building Creekside Studio/Lofts, Whatcom County's first live/work units, six multiple story dwellings that include office or shop space at street level and exceedingly well-appointed apartments above.

The units incorporate a variety of green building techniques including steel siding, marmoleum (a linoleum floor made of 100 percent natural ingredients including linseed oil, cork, limestone, tree rosin and natural minerals), locally manufactured plywood and cabinetry, bamboo flooring, Energy Star appliances and florescent lighting. The elegant bathtubs in the units are recycled, re-glazed claw foot tubs circa 1890. Each unit is heavily insulated and wired to accept solar voltaic panels to take advantage of the south-facing orientation of the lot. This orientation also guarantees lots of natural light, maximized by clerestory windows and transoms. Roof rainwater will be collected in two 1,750-gallon tanks for use in the buildings dual-flush toilets.

The Creekside Studio/Lofts embody Blethen's overarching concepts of a green lifestyle, affording residents a "zero commute" (simply walk downstairs to work) and easy walking distance to the downtown core. Although two car garages are included, Blethen points out that inhabitants could live in the units without need for a car.

"We need to re-ground ourselves," he says. "So many people are estranged from the Earth. We've got to address our consumption problems, especially regarding energy." Lathrop agrees. When asked why green building was important, her answer (pardon the expression) hits the nail on the head.

"Why is clean air and water important? Our children need trees. We can't continue to be the same consumptive society failing to think about the future needs of people and the planet. Global warming is real and building and development patterns contribute greatly to green house gas emissions. Building green is a great way to help lessen the impact of industry on our environment, improve our local economy – buying local, using local suppliers and materials are key to green building – and contributes to the strength of our community. The more people understand the impact of how we live, the more the green building market will continue to grow."