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WATER EFFICIENCY CASE STUDY: Fifth Floor, Please

By Tom Crain
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Clearwater Summit Group (CSG), Spokane-based landscaping company, recently discovered that working with Washington State's highest profile "green" project, building gardens and irrigation systems five stories high, is showing them another kind of green.

This "greenest" of green projects, providing CSG with \$250,000 worth of business, was the renovation of downtown Spokane's century-old Saranac Hotel using just about every imaginable environmentally friendly construction product and system known to mankind, including solar panels, a solid ground source heat pump and a state-of-the-art rainwater collection system.

But no environmentally friendly commercial building renovation would be complete without a green roof with recycling irrigation technology. CSG was the landscape contractor that tackled the complexities of green roof technology for the first time in their history.

"CSG is known as the Inland Northwest's major landscape, design and construction company specializing in difficult sites," says Tim Sweet, CSG president and project manager. "Our participation in the Saranac Hotel project went a good long way in reinforcing that renown."

BUILDING GREEN, GREY & PLATINUM.

Setting up irrigation systems, landscaping and hardscaping high in the sky redefined "specializing in difficult sites" for CSG. For eight months, including the sweltering summer months of June, July and August, Sweet and his crew worked five stories up employing fall protection devices for workers and pedestrians below and operating a crane for hoisting up building materials. The main landscape architecture firm, Zeck Butler Architects, provided CSG with a set of strict specifications to follow for this project. The goal was to obtain top certification in the United States Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) program providing a standard for the design, construction and operation of "green" buildings.

Spokane's Saranac Hotel, first erected in 1908, was purchased by Jim Sheehan, a local attorney who turned it into the Community Building Complex. Tenants include a restaurant (that harvests the herbs in the green roof's plant mix) plus a number of environmentally friendly, not-for-profit organizations and a few legislators' offices. CSG, joined by seven Spokane-based design and 13 construction teams to complete the renovation, became involved early on in the design process. They did not have to go through any formal competitive bidding because of an already well-established relationship with Sheehan.

CSG's portion of work included the rooftop garden, irrigation system and hardscapes. The garden was planted with indigenous plants and irrigated with a drip system. The rooftop supports a patio with 24-inch square architectural concrete slabs and two rooftop silos (cisterns) collecting excess rainfall. Grey water is collected in six 2,000-gallon storage tanks in the basement to contribute to the irrigation needs.

For eight months, I was out on the site two to three days a week," says Sweet. "The delivery of materials was an interesting process. We had to be sure the structural engineers knew what they were doing and the roof could carry the load. Our crane hoisted up 85 yards of light-weight engineered soil in individual bags holding about 1 cubic yard each and 20 tons

CRAVING



LETTERS
to the **EDITOR**

of 24-inch square architectural concrete slabs. Once we got the material up to the top of the roof, it was pretty much like any other landscaping project.”

The green roof's first garden area consists of a 2-inch layer of soil planted with five different varieties of sedum offering a variety of foliage height, color and blossoms; the second, a 6-inch layer of soil planted mostly with ornamental grasses and a few native perennials. A third garden on the street level was designed for a small courtyard area with pavers, block walls, bed rock and various indigenous plantings. The garden's growing medium is a lightweight engineered soil of humus and pumice placed over a membrane roof system.

SKY-HIGH RESULTS.

The project was completed in September 2007, when it opened to the public both inside and outside on the roof. “The rooftop area is used substantially by the tenants and public,” says Dave Sanders, Building Manager. “There are business meetings, weddings and people working on their wireless laptops up there constantly. Even when it snows, people are still sitting out there, it's that well-received.”

The irrigation system and drought tolerant plantings are projected to save 37,000 gallons of water usage while the two rooftop silos (cisterns) collecting excess rainfall are projected to save up to 38,000 gallons of water annually. The building conserves another 55,000 gallons of water annually by using waterless urinals and a grey water system for irrigation.

According to Sweet, if the irrigation system is maintained and winterized properly, it should be viable for at least 20 years. The piping itself should last indefinitely. About three hours of maintenance on the pumping system is required every week.

For all this, the Saranac project recently achieved LEED platinum certification, the highest achievable level developed and administered by the U.S. Green Building Council. And according to Sweet, any commercial green projects receiving platinum LEED certification is a rarity east of the Cascades.

The green roof industry appears to be booming as much as it is blooming throughout the U.S. But, it is slower to develop outside of major urban centers like Seattle and Portland. CSG wants to develop this aspect of their business, but they know it is dependent upon how many opportunities will come on line in their region.

Landscape professionals such as CSG are keeping a watchful eye on the growing interest in green roof and water conservation gardens to see if they will continue to offer new opportunities for them. Trends indicate that more and more green roof manufacturers are contracting with landscaping companies to build green roofs on existing commercial buildings, and public and private incentives are increasing for water conservation landscaping techniques.

“The Saranac renovation was the first major green roof project in our region (eastern Washington/western Idaho),” explains Sweet. “We need to get state and federal agencies providing additional tax incentives and research grants to support landscape contractors involved with sustainable landscaping projects. This will give this specialized form of landscaping a kick start, encouraging landscape and irrigation contractors to do more and more work in this area.”

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