

Aquatics center saves energy, water with green tech

Portland Business Journal - by Brad Berton Contributing writer

The new \$12 million indoor aquatics center opening soon at a Portland Eastside community center should be one of the most energy- and water-efficient such facilities anywhere.

Thanks to ultra-efficient water filtration and re-use systems, the planned rooftop solar panels and other new-wave elements, water and energy consumption at the East Portland Community Center's indoor pool are expected to be far lower than similar complexes around the world.

Portland Parks & Recreation expects the facility to save well over 1 million gallons of water annually, compared to traditionally designed and equipped aquatic centers. And the decade-old community center a few blocks east of Mall 205 is projected to need 60 percent less utility-supplied energy than typical facilities.

Add it up and the expansion project nearing completion along Southeast 106th Avenue could also become the nation's first aquatic center to achieve the highest sustainability certification level — LEED Platinum — under the U.S. Green Building Council's Leadership in Energy & Environmental Design rating system.

More importantly, factoring in efficiency-related grants and financial incentives, the modest additional costs of installing the green building components hardly dent the construction budget. But they'll generate positive impacts on utility bills as soon as neighbors begin using the pools and spa over the holiday season, noted city architect Richard Bosch, the PP&R project director overseeing the addition.

The aquatics center will feature all manner of modern green technologies, with the solar panels and filtration systems supplying the biggest bangs for the bucks.

The filtration system, dubbed Defender by manufacturer Neptune-Benson of Coventry, R.I., utilizes technology known as regenerative media filtration. In simple terms this process, which many large water parks have adopted, requires far less jetted water to "backwash" filtered debris into the sewer system.

The facility adjacent to Floyd Light Park is expected to consume about 30 percent less potable water than comparable aquatic centers. The savings could amount to as much as 1.5 million gallons annually, Bosch noted.

On the energy front, a series of photovoltaic panels to be installed atop the new facility's south-facing angled roofs are designed to generate 85 kilowatts of electricity annually. That's at least 12.5 percent of the entire community center's expected annual energy use (with heaviest contributions during the sunniest months), explained sustainability specialty architect Lisa Petterson, project manager with Portland's Sera Architects.

An adjacent six-panel solar thermal installation, located above a mechanical room, will heat shower water for the community center's expanded locker rooms. The center's panel system, which will be one of Portland's largest such solar arrays, could be expanded to also help heat water in the primary family pool, lap pool and spa.



Technology will help a new Portland aquatic center save nearly 1.5 million gallons of water annually.

The facility can also capture heated air exhausted from the pool area and locker rooms, using it to assist in pre-heating pool water. A highly efficient natural gas-powered system is the primary water-heating source.

Large windows on the aquatic center's north and south walls, along with a sophisticated light monitoring system, also reduce the need for artificial light, Petterson added.

The facility's new parking lot also contains green elements. Large bioswales filter rainwater running off roofs and paved surfaces. And so-called "injection" dry wells return stormwater to the subterranean aquifer, rather than the sewer system.

Sera Architects designed the 25,000-square-foot expansion project, with assistance from Water Technology Inc., an aquatic design and engineering firm based in Beaver Dam, Wis. Locally based Interface Engineering provided mechanical design and engineering services. The general contractor is Lease Crutcher Lewis.

The center's focal feature is the family "leisure" pool complete with twisting water slide, "current channel" play area, warm water lap lanes and other play features. The facility also includes a spa and a four-lane lap pool, along with the expanded locker rooms and parking lot.

About \$6.6 million of the addition's funding came via a 2002 Portland Parks & Recreation levy aimed at better distributing recreational amenities throughout the city. The city council provided another \$5.3 million in the 2006-07 budget.

Petterson said sustainability-related incentive programs should cover about half the additional costs of installing the aquatic center's various green elements. That means those extra costs, known as the "green premium," will ultimately only boost the overall construction budget by less than one-half of 1 percent.