

SOLAR POOL HEATING SYSTEMS

Every Pool Should Have One

By Kathy Shinn, Oregon Department of Energy



The aquatic center in Hood River has a nearly 5,000 square foot solar hot water system to heat a 281,000 gallon pool. Retractable panels open in summer.

Photo Credit: R. Brent Gunderson, Gen-Con, Inc.

Swimming pools and solar are good summer companions. Together, they save energy, reduce costs, and are affordable with Oregon incentives. This holds true for pools of any size – from backyard to competition scale.

Parks District benefits from solar pool heating

Scott Baker, Assistant Director of Hood River Valley Parks and Recreation District in the Columbia River Gorge, couldn't be more pleased with the Aquatic Center's solar water heating system.

When the District requested an energy audit of its three-pool complex, findings supported the addition of a solar pool heating system and a replacement high-efficiency natural gas condensing boiler as the secondary system. Baker, a fan of renewable energy, credits the Park and Recreation District Board with taking the long term view on

costs and benefits. They said "yes" to a system with an estimated cost of \$273,313, expected savings of about \$18,200 per year from reduced natural gas costs, and a 15-year payback once incentives were figured in.

The system serves the aquatic center's largest 281,000 gallon pool from May through September. After one season, it's outperforming expectations. Savings are running about \$21,000 annually at current natural gas prices and the payback period could be only 10 years.

Cash and tax credit incentives covered nearly \$80,000 of project costs. Energy Trust of Oregon provided a \$15,410 incentive payment and the District is eligible for \$64,500 through the Oregon Business Energy Tax Credit Pass-through option.

Baker would like the cost-effective renewable energy concept to catch on with businesses and homeowners and spread to other Hood River rooftops. The Hood River Valley Parks and Recreation District received the 2006 Oregon Recreation and Park Association Design Award.

Salem homeowners association praises solar thermal

Owners of smaller pools also benefit from solar pool heating systems. When a new roof was planned for the recreation center at the Villa Candalaria condominiums in Salem, the Homeowners Association saw an opportunity to upgrade their outdoor pool to a solar heating system.

Their solar installer, Ron Summers of Summers Solar in Salem, worked closely with the roofing company to coordinate installation. The 576 square foot system is barely visible on the roof. Inside the pump room, a controller monitors the temperature and opens and closes valves automatically. Summers educated residents on the system and they're finding it easy to use.

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Pool covers: the next best thing

Pool covers reduce heat loss when the pool isn't in use, especially at night.



Bryant Woods Homeowners Association in Lake Oswego used Oregon's Business Energy Tax Credit Pass-through option to help finance the \$8,740 cost for the installation of solar blankets and reel systems for two outdoor pools in 2006. Even though the system wasn't operational until July of that year, the Association's total annual costs for natural gas, water, and pool chemicals dropped 29 percent, 15 percent and 23 percent, respectively, from the previous year.

Thanks to two of its members who served as Pass-through partners, the Association received \$2,666 towards project costs.

Solar blankets and reel systems purchased by the Bryant Woods Homeowners Association in Lake Oswego save pool heating costs, water and pool chemicals. Photo Credit: Ken Kaufmann, Bryant Woods Homeowners Association

Current pool chairwoman Sandra Henry says residents look forward to the expected savings of 590 therms of natural gas per year. That translates to

tion's \$6,489 project costs. Costs were further offset by an incentive of \$1,210 from the Energy Trust of Oregon. Incentives reduced the project's simple

systems use the pool filtration pump to circulate water directly through the collectors, and the pool serves as the storage tank. In order to completely drain the system before freezing temperatures arrive, collectors must be installed on a slope.

To be easy on the owner, the systems use automated controls to monitor water temperature and provide backup from other heat sources as needed during the outdoor swimming season. Hood River's large-scale system uses web-based monitoring software and tracks detailed information on all systems.

"Solar water systems are the unsung heroes of solar," says Gunderson, also the installer for the Hood River pool. In Oregon, solar pool heating systems offer great value and homeowners who install solar thermal systems can take advantage of Oregon's Residential Energy Tax Credit, the Energy Trust of Oregon or utility incentives. ■

"The decision to install solar pool heating is environmentally sound and financially responsible to the taxpayers who support us," Baker says.

"Just be prepared for all the buzz. People love it. Also plan to educate your entire staff so they can answer questions."

estimated annual savings of about \$800 and a payback of nine years. Symetra Life Insurance Company served as the Business Energy Tax Credit Pass-through partner and provided a \$1,979 lump-sum payment that reduced the associa-

tion's \$6,489 project costs. Costs were further offset by an incentive of \$1,210 from the Energy Trust of Oregon. Incentives reduced the project's simple

payback to about four years. Solar pool heating systems are "about as low tech as it gets," says Baker. "You pump pool water to the roof and it comes back warmer - it's like a black garden hose on a hot day." The