

Case Study: Standing Stone Brewing Co.

Low on energy use, high on sustainability

If you've just attended a play in Ashland, Southern Oregon's premier theater and vacation town, and want to pause for conversation over a pint and a tasty wood-fired oven pizza, head to Standing Stone Brewing Company.

Just a block from the Oregon Shakespeare Festival, locals and visitors alike enjoy the pub's full range of meals, hand-crafted ales, stouts and porters

throughout the year. What patrons may not know, however, is the owners and operators are leaders in restaurant energy conservation.

A family enterprise since 1997, Standing Stone's brewmaster and vice president is Alex Amarotico; his brother Emile serves as president and business manager. Older brother Mark resides in San Francisco, but came north to help with building renovation prior to opening.

The brothers, originally from Pennsylvania, came one by one to the West Coast.

Emile graduated from the Culinary Institute of America in New York, where he met his wife Karen, who also works in the business. They moved to Ashland in 1986, and both earned business degrees at Southern Oregon University to complement their culinary background. Alex and his wife Danielle were married at the restaurant, and she also joined the family business team. Diane Amarotico, mother of the brothers, greets customers and helps with the operation.



Standing Stone Brewing Company established in Ashland in 1997 uses several energy-efficient systems in its historic building.



Brothers Alex (left) and Emile Amarotico are business partners and leaders in restaurant energy conservation.



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Historic Setting

The Standing Stone building was built in 1925 as the Whittle Garage. “We loved the structure and wanted to preserve its character as we transformed it into a restaurant and microbrewery,” said Alex. In 1998, the Ashland Planning Commission honored the owners with an Award of Distinction for Outstanding Commercial Remodel. The building is listed on both the National Register of Historic Places and the Ashland Historic Commission Register. Three years later they were named Ashland’s Retail Business of the Year.

The family wanted their business to have an inspiring name that connects with the local area. Research at the library turned up the name of a prominent volcanic rock feature southeast of town. Native Takelma Indians called it “tsin tsat tsaniptha,” which means “stone stands up.”

Energy Conservation

How did they get interested in energy conservation? “I’ve always been interested in sustainability - not using more than you produce,” says Alex, who’s spearheaded many of the energy-efficiency projects. “I also love engineering, finding better, more effective ways of doing things.”

Energy use in restaurants is intensive. Cooking requires the most energy, followed by space and water heating, lighting, cooling and refrigeration. After collecting ideas from city employees and trade magazines, it became apparent that the family could enhance their restaurant’s operation, increase profits and benefit the environment by installing several energy-efficient systems that are cutting edge in the restaurant business. They found that incentives, like rebates and tax credits, reduced costs to the point that improvements were affordable and costs could be recovered over a reasonable amount of time.

Kitchen Improvements

In 2002 they installed an energy-saving variable speed hood control system for the kitchen. The system can be installed on both new and existing hoods. Kitchen fans typically run all day at 100 percent speed. However, controlling fans with variable speed drives that receive feedback from temperature and smoke sensors allows fans to slow during off-peak periods and operate with the minimum exhaust flow needed. The air conditioning system also runs less, because less cooled air is lost by venting through the exhaust fan. For Standing Stone, this meant reduced electricity use.



Alex Amarotico checks the Energy Management System (EMS) that helps control energy use at the Standing Stone Brewing Company.

During colder months when the restaurant is heated by natural gas, savings occur in a similar way, because fans expel less warmed air. “A secondary benefit for kitchen workers is a reduction in the background noise associated with kitchen ventilation systems that usually run constantly at full speed,” adds Alex.

Oregon’s Business Energy Tax Credit program helps fund qualified energy-saving efforts. Standing Stone qualified for a tax credit of \$2,089 on the \$5,969 project. This 35 percent tax credit reduced project costs to \$3,880. The expected combined electricity and natural gas savings amount to 22 percent, savings of about \$1,213 per year, with an estimated payback period of 3.2 years (including incentives).

Energy System Added

The following year, the Amaroticos installed a programmable energy management system (EMS). Although EMS technology was first developed for large commercial and industrial buildings, scaled down versions now fit smaller operations. Restaurants, including some restaurant chains, are increasingly taking advantage of the benefits.

Capabilities of EMS typically include direct digital temperature control; pre-set start and stop times to coincide with business hours; controls that monitor demand and reduce selected low-priority loads, such as air conditioning and lights for brief time periods; and reduced ventilation during off-hours.

EMS uses one or more computerized control panels and a communication panel. The control panel is connected to digital temperature sensors and a controllable breaker panel that replaces the normal breaker panel. At Standing Stone, these systems control the Heating/Ventilation/Air Conditioning (HVAC) system, hot water, interior and exterior lighting, the freezer and walk-in cooler. In the brewery operation, natural gas fires the steam boiler to produce steam for the brew kettle and for refrigeration. These systems will also be integrated into the energy management system.

Controls are accessible on-site or remotely by computer modem; trend graphs and sensor logs are available to monitor energy use. Alarms are also included to indicate equipment failure.

The total eligible project costs for the EMS were \$14,000 for system costs and labor, but \$9,511 (nearly 68 percent) was paid for with a combination of tax credits and rebates. The City of Ashland Electric Department, a municipal utility, provided a \$2,111 rebate and Bonneville Power Administration gave a \$2,500 rebate. The largest benefit came from a 35 percent Business Energy Tax Credit of \$4,900.

Because the system has only been in place since November of 2003, Alex is not yet sure if actual electricity use is on target to meet the expected annual reduction of 32,250 kWh, a 15.3 percent saving. If predicted annual energy savings average \$2,161 per year, the project will pay for itself in 6.5 years through energy savings. "I'm convinced the improvements are reducing both energy consumption and costs," he observed. "And because electricity rates have gone up, at a minimum we'd be keeping pace." Did the Oregon Business Energy Tax Credit make a difference? "It wouldn't have happened without it," said Alex.

Additional Features

The family also decided to improve restaurant lighting. "We replaced 200 volt track lighting with focused low voltage lighting that provides incredible light quality and ambiance at night," explained Alex. They also replaced the hot water heater with an instantaneous water heater and storage tank.

A deck in the rear of the building affords diners wide views of the surrounding mountains. Green-leafed hops, an appropriate vine for the brewery business, grow up the building's concrete walls, softening the



Standing Stone Brewmaster Alex Amarotico stands in the middle of his brewery/restaurant with his mother, Diane, who also works in the family-run business. A restaurant's profit typically runs from 3 to 9 percent of total revenue. Money saved on operating costs adds to profits, so saving 20 percent on energy operating costs can increase profit by as much as one-third.

surface. Recently planted trees will increase shade in this pleasant outdoor dining area as they mature. Because the sun significantly warms the deck area at certain times of day and the concrete building readily absorbs heat, an awning was installed to block the sun's rays. When planning this feature, Alex realized that a solid awning directly overhead would mean diners couldn't see the night sky. Solution? Use adjustable louvered sections of awning overhead to permit star-viewing.

Future Projects

Alex would like to see energy efficiencies required for all new restaurants. It's clear that energy improvements at Standing Stone will be ongoing. Plans are in the works for heat recovery on the air conditioning system and beer glycol chiller to pre-heat hot water.

A larger vision includes developing a hot water district for their downtown block. With the brewery operation, the business creates five times the hot water needed by the restaurant. With a heat recovery system, they could potentially sell preheated water to supply other businesses on the block.

While skylights at the peak of the roof have been replaced with Lexan, a hollow core material with insulating properties, a rack may be installed to provide shade in the summer. Eventually solar panels could be added. With their business success and energy-efficient improvements, Standing Stone Brewing Company is becoming a model for sustainable restaurant operations. The Amaroticos have truly lived up to the slogan on their Web site: "A block from the Shakespeare Festival, but miles from the ordinary."

Business Energy Tax Credit

Business owners who pay taxes for a business site in Oregon are eligible for a tax credit. The tax credit is 35 percent of eligible project costs, either the incremental cost of the system or equipment that's beyond standard practice. Those with eligible project costs of \$20,000 or less may take the tax credit in one year. For projects over that amount, the credit is taken over five years: 10 percent in the first and second years and 5 percent each year thereafter. If the full tax credit can't be taken each year, a business owner can carry the unused credit forward up to eight years.

Non-profit organizations or public entities who have no tax liability or business owners who choose can pass their project tax credit eligibility on to a business or individual with a tax liability using the Pass-through Option. This allows for a cash payment in exchange for the tax credit. (More information is on the Department of Energy Web site: www.energy.state.or.us).



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