



SALMON CREEK  
MEDICAL CENTER

## NEWS RELEASE

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# Legacy Salmon Creek energy study has national implications for hospital design

*Efficiencies and myth-busting will help healthcare and other industries fine-tune energy use*

VANCOUVER, Wash. – An energy study at Legacy Salmon Creek Medical Center is expected to have a national impact on the future of hospital design. Study partners were the University of Washington’s Integrated Design Lab and Eugene-based SOLARC Architecture & Engineering Inc.

The study confirms that, in many hospitals, heating systems use the most energy. The study also has some surprising results, namely that imaging equipment and hot water account for much less energy use than had been thought.

The UW project team worked with Legacy Health officials to monitor energy use at the hospital during a one-month period in the winter of 2011. The detailed information on how hospitals use energy will help reduce energy use in healthcare.

The study was made possible with funding from the U.S. Department of Energy, through the American Recovery and Reinvestment Act, and the Northwest Energy Efficiency Alliance’s BetterBricks Initiative.

“This kind of detailed data is simply not available to experts in hospital design, construction and operations nationally; it is much needed and anticipated by those seeking to develop high-performance hospitals,” said Heather Burpee, research assistant professor with the UW Integrated Design Lab.

Legacy Salmon Creek, which opened in August 2005, was chosen because it already performs more efficiently than the typical U.S. hospital in terms of its use of electricity and natural gas. The national and state average Energy Use Index (EUI) for hospitals is about 270 KBtu/sf-yr. Salmon Creek’s EUI is 215 KBtu/sf-yr.

“We could have chosen any hospital in the nation for this study, and Salmon Creek was the best choice,” said Michael Hatten, principal of SOLARC. “They have a reputation for efficient energy use, and they were enthusiastic to work with us.”

“We designed and built this hospital with energy efficiency and high performance in mind, and we have since developed a strong strategic energy management plan in partnership with BetterBricks,” said Pat Lydon, coordinator of strategic resources for

Legacy Health. “This study is a great opportunity to share our successes with a larger audience that has similar goals in mind.”

National societies such as the American Society of Heating, Refrigerating, and Air-Conditioning Engineers, along with key engineering firms and the U.S. Department of Energy, are among the many who will be able to use this data to make more informed decisions when working with design teams and hospital owners looking to save energy at their facilities. The implications are both for new construction and retrofitting.

Reducing and controlling energy costs can lead to bottom-line savings for healthcare organizations. Such savings translate to increased financial stability for organizations as well as lower costs to patients.

According to energystar.gov, U.S. healthcare organizations spend more than \$6.5 billion annually on energy costs, and that figure is rising. Based on their calculations, every \$1 a nonprofit hospital saves on energy is the equivalent to \$20 in new revenue.

Lower energy use also benefits the environment, with fewer harmful greenhouse gas emissions; it also delays the need to build more power plants and lessens the reliance on expensive open-market power.

The energy study dismantled some long-held beliefs. Imaging equipment, notably MRI machines, were long thought to be large energy users. But study results indicate all imaging equipment accounts for less than 1 percent of energy use. Likewise, hot water is another relatively small energy user in the hospital, at less than 2 percent of total energy use. This information will help designers and energy experts to focus on larger energy users, rather than devoting time and dollars to areas that would result in very small relative gains.

So where can energy savings be found? The study found air-reheating equipment to be the largest single energy user by far, accounting for more than 40 percent of energy use. In a reheating system, air is cooled to a common low temperature, and then reheated to provide comfortable air temperatures. A common practice, it also is very energy intensive.

There are limited – but promising – opportunities for reducing reheating in hospitals. The UW’s Integrated Design Lab has found that most hospitals generate all the heat they need on any day that the temperature is above 20 degrees; the challenge is moving that heat to the right places. Their research, Targeting 100!, lays out ways hospitals could use significantly less energy without spending significantly more money.

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Find the Executive Summary and the complete study online at [http://idlseattle.com/Health/study\\_hospital.html](http://idlseattle.com/Health/study_hospital.html)

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