



Rebuild America Success Stories highlight partnerships working to improve communities by practicing energy awareness and investing in energy-saving measures.

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## The Right Heat on Campus

### *Upgrades at University of Nevada, Las Vegas*

The Lied Library at the University of Nevada, Las Vegas (UNLV) was considered state of the art when it opened in January 2001. But in one respect, that was incorrect. Two and a half years later, a study pointed the way to an operational change at the library that is saving a substantial amount of money through energy efficiency. Other energy-saving measures are planned and underway on the campus.

#### The Challenge

Southern Nevada can be very hot – routinely topping 105 degrees F in the summer, sometimes reaching 115F. When the Lied Library was completed and opened in 2001, the 301,600-square-foot, five-story main library had, of course, an air conditioning system to fight the heat. But air conditioning can excessively cool some rooms, because the air leaves the air handlers at 55F and warms only gradually as it moves along ducts and through rooms. The rooms closest to the air handlers can be uncomfortably cool while others are just fine.

The original operational plan for the Lied Library was to run boilers during the summer to prevent some rooms from being too cool. It had been estimated that this solution would be less expensive than increasing the horsepower to fans to distribute the cool air more evenly. But the library was running its natural gas bill up tremendously, and UNLV wondered whether it could find a better way to control its energy expenses.

#### The Solution

UNLV, as a Rebuild America community partner, was able to make use of the expertise of a national energy laboratory. In July 2003, Pacific Northwest National Laboratory studied the library and concluded that the operational plan was based on incorrect estimates of the energy demand of the boilers versus the fans. It would be better to turn off the boilers and increase the speed of the fans, the study indicated.

“Last summer we turned off the boilers, and nobody complained about comfort,” says Jim Wilhelm, assistant director for energy management at UNLV.

While comfort remained the same, energy consumption dropped. The university estimates it will save more than \$20,000 a year because of that zero-cost change.

Rebuild America helped UNLV avoid another energy drain. In that case, the idea was to try combined heat and power to warm the campus swimming pool while generating

# Partnership Facts:

**Name of Partnership:**

University of Nevada, Las Vegas

**Targeted buildings:**

College and University

**Space completed:**

301,600 square feet

**Annual energy cost savings:**

\$21,000 (estimated)

**Amount invested in energy-saving project or initiative:**

0

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electricity. Oak Ridge National Laboratory studied the plan and concluded that it would not be a good one.

Wilhelm has found other benefits in Rebuild America. He mentions workshops, in particular, as valuable resources for learning more about lighting, air systems, building envelopes and other subjects. "I've been to several of them now, and they're really very useful," he says.

## What the Future Holds

The savings from the Lied Library change will contribute to a campus metering project. UNLV is using that money and other energy-efficiency savings to buy meters for most campus buildings. The meters will provide real-time energy consumption and trend data on each building, allowing university staff to make better decisions on what operational or technical changes may be needed. "Monitoring is an informational tool, an ability to identify potential problems," Wilhelm says.

The meter data will be accessible from computers around campus, so that not only staff but building occupants will be able to see the information and take a greater interest in efficiency.

Separately, UNLV is using performance contracting for an array of improvements – better lighting, chillers and energy management systems, and installation of variable frequency drives.

Photo credits: John Litty/UNLV

To learn more visit: [www.eere.energy.gov](http://www.eere.energy.gov)

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Rebuild America is a U.S. Department of Energy program that focuses on improving communities through energy-saving solutions.



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