BEP REPORTER

Free & Confidential Environmental & Energy Efficiency Assistance from the Business Environmental Program (BEP) *Volume 1 2011*

Energy Efficiency Success

Peter Millar is the Energy Management Specialist at the Business Environmental Program (commonly known as BEP), a program of the UNR Business Services Group that "provides free and confidential environmental management assistance to business and government operations in Nevada." He recently met with Chuck McCumber at the NSBDC to discuss a recent client with whom he worked on an energy efficiency retrofit.

His client: Gary Dyer, the owner of a 25,000 sq. ft. medical office building located at 890 Mill Street. Gary met Peter at one of the energy efficiency seminars that BEP gives to the public throughout the year.

"The 890 Mill Building is an example of what you can do with a methodical approach to evaluating and acting on opportunities in energy efficiency," said Millar.

BEP provides free energy audits, in which Millar inspects commercial buildings, their current energy uses and systems, and constructs estimates of costs saving based on numerous energy saving techniques as well as the possible installation of renewable energy systems.

In the case of the 890 Mill St. building, "the owner decided to move forward with upgrading the heating/ventilation and air condition [HVAC] system. It was aging; there were comfort problems," said Millar.

The installation of a new, more efficient HVAC system reduced the gas use from an original cost of $22,000 per year to less than $6,000 per year. An added annual savings of over $5,000 per year have accrued from reduced maintenance costs, and incalculable savings in management stress. Overall, the project cost of about $250,000 paying for itself in under ten years, and reflected in greatly enhanced building resale value. The HVAC system uses an intelligent control system that includes an economizer that adjusts the use of outside air for cooling purposes as well as a more efficient fan system, resulting in less energy and more consistent temperatures.

"That's an equivalent of 400 million watts of energy no longer being pulled out of the grid," said Peter, "and 250 tons of carbon dioxide not pumped into the air every year."

Included in the new system is the ability to operate it remotely, as well as integrated diagnostics that allow those monitoring it to identify problems and call the appropriate repair person, if needed. Millar stated that the HVAC project payback is approximately 10 years.

But they didn't stop there. They are carrying-out a lighting retrofit to replace the older fluorescent technology with more efficient bulbs and incorporate task lighting: lighting placed where and when you need it at levels that are specified according to use type (which are often less than most static light systems). Such systems use less energy.

The cost of the lighting retrofit is $8,500, with an estimated annual savings of $4,500 and 23 million watts. Once the project is paid back in less than two years, those annual savings of $4,500 will go straight to the bottom line.

Continued on page 2

Business Environmental Program
College of Business
The Business Services Group

The Business Environmental Program receives funding support from the Nevada Division of Environmental Protection and U.S. Environmental Protection Agency.

Energy Efficiency Success (cont'd)

Millar and Dyer are even considering upgrading the water systems. Most current recirculation systems have a central heating unit and have to work hard to keep all the piping hot. New technology allows for the replacement of the standard recirculation system with point-of-use systems. Essentially, tiny heating units are installed under each sink. They don't draw energy when little electric resistance heaters (like toaster coils) heat up an amount consistent with the water flow. The hot water supply is almost instantaneous.

"It's an example of microprocessor technology driving other technology forward," said Millar.

The water system costs $6,000 and is estimated to save $1,900 annually.

Finally, Millar and Dyer have plans for the installation of a solar photovoltaic (PV) system that will produce an estimated 100 megawatt hours of energy per year. The net cost of the system is $171,800, with annual savings of $14,600.

After the energy efficiency measures and the renewable PV system, the building will have reduced its grid energy requirements to almost zero.

"The beautiful synergy occurs when you take a building like this and work with the energy efficiency opportunities to bring down the total energy use and then apply alternative energy systems on top of that," said Millar, smiling.

Recently, Millar assembled the data on actual energy savings gained from efficiency retrofits carried out on four projects in our area, the largest and most advanced of which is 890 Mill. As a matter of curiosity, he calculated the energy we'd save and money we'd keep in the community if all the buildings of a similar size were to be retrofitted. Based on the average energy savings between the four, and the opportunity to retrofit approximately 1,500 similar buildings in the area, he estimated an opportunity to save $13.4 million in Washoe County alone and keeping those financial resources local. The potency of such projects shows the potential for a sustainable and independent community.

One difficulty though is in our community's ability to know what's been done so far.

"We don't know what's been done [so far]. There's no coordination between the local entities. It's not public information," said Millar.

"A great value would be to develop a spatial database."

Millar imagines the creation of a geographic tracking system of installed energy efficiency and renewable energy systems throughout the region. He stated that while we don't have one yet that he knew of, it would help to have a baseline from which the community can progress.

Millar said he's not limited to large buildings to find savings. "We work with a lot of small customers – sandwich shops, laundromats, for example – [businesses] with only four or five employees."

His office provides a variety of services for the dynamic environment of energy efficiency and renewable energy.

"I am happy working with them in whatever way will facilitate the project: qualification of components, review of contractor proposals, coordinating with contractors, power company incentive programs, and re-audits as the view or substance of the opportunities changes," said Millar. "This is the only way I have found to move these projects forward."

BEP can be reached at www.unrbep.org or by calling the toll free number: 1-800 882-3233.