



Case Study: Grand Valley Recreation Center

Battlement Mesa, Colo.

By Cam Burns, CLEER



Lighting retrofit to save more than \$10,000 a year at Grand Valley Recreation Center

The Grand Valley Recreation Center is one of Battlement Mesa's important civic institutions. Local residents use the facility day and night for recreation, and it hosts birthday parties, community meetings and special events. Not surprisingly, all that use requires a lot of energy, and the Recreation Center regularly sees electricity bills topping \$50,000 a year.

Today, however, the Center is on track to save more than \$10,000 a year, now that it's invested \$65,200 in a lighting retrofit. It's believed to be the biggest lighting retrofit in Garfield County, with 495 new high-efficient T-8 fluorescent and 91 LED bulbs lighting the 53,000-square-foot center.

"The Grand Valley Recreation Center has installed one of the most complete lighting efficiency projects on the Western Slope," said Ryan Mercer, title of Franklin Energy,

who consulted on the project.

"If you look at our budget, [electricity] accounts for a huge part of it," said Anne Huber, the center's director. "Add to that natural gas and water, and the other utilities, we budget over \$80,000 a year for utility costs."

With a tight budget and limited resources, saving money is important in order to keep user fees at the present, affordable rate of \$15 to \$30 per year. (The nearly 2,500 homes on Battlement Mesa pay an assessment of \$205 per year, which covers about 75 percent of the center's budget. The rest of the center's income comes from grants, room rentals and the user fees.)

So in early 2012, when Huber heard about a presentation on saving energy through efficiency to be held at Grand River Health in Rifle, she decided to attend. There, Erica Sparhawk of CLEER, Clean Energy Economy for the Region, which runs Garfield Clean Energy's energy efficiency programs, explained how facilities like the rec center



Grand Valley Recreation Center Director Anne Huber.
Photos by Cam Burns

could save money through energy retrofits.

"We just got started right away," Huber said. She contacted Sparhawk and enrolled the center in the Garfield Clean Energy Challenge for Business.

Sparhawk recommended contacting Mercer at Franklin Energy for a lighting energy audit. He provided the details Huber needed to seek quotes from an electrician. He also explained the rebates available Xcel

The Upgrades

- 495 T-12s replaced with T-8 lamps and ballasts
- 91 halogen lamps replaced with LEDs
- **An anticipated 20 percent (\$10,000) annual savings**

Lessons Learned

- Improved lighting required less summertime cooling
- No decrease in lighting quality
- Often, much of the cost can be covered by rebates



Ricardo Malta in the weight room.

Energy, which serves large energy users in Battlement Mesa.

In February and March 2012, O'Dwyer Electric Service of Grand Junction replaced 495 fluorescent T-12 lamps and their ballasts, which regulate the amount of electricity flowing into a light, with much more efficient T-8 lamps and ballasts.

"After this first project was completed, I did not immediately see the drop in kilowatt-hours I was expecting," Huber said. "But that's because a lot of these lamps stay off when the rooms are not in use. We saw a small drop, but it wasn't huge. But the big difference came late in 2012."

In November 2012, Huber contracted with O'Dwyer Electric for a second phase of the lighting retrofit, replacing 91 halogen lamps with LED lights spread throughout the facility:

- In the parking lot, six 400-watt lights were replaced with 100-watt LEDs.
- In the pool room, 20 400-watt lights were replaced with 100-watt LEDs.
- In the lobby, 18 250-watt lights were replaced with 100-watt LEDs.
- In the racquetball courts, exercise room and gym, 47 400-watt lights were replaced with 100-watt LEDs.

The fluorescent retrofit in early 2012 cost \$12,500, and the halogen-to-LED retrofit in late 2012 cost \$52,700.

However, the total cost of \$65,200 was offset by \$21,836 in rebates from Xcel Energy. Xcel rebated \$5,941 for the fluorescent retrofit, and \$15,895 for the LED retrofit, which Mercer helped facilitate.

The rec center also used a grant of \$36,000 from the Garfield Federal Mineral Lease District for the LED retrofit.

The resulting out-of-pocket cost to the Recreation Center came to \$7,364. Mercer estimates the center will save about \$10,900 per year, and to date, Huber thinks that estimate is accurate. So the district's out-of-pocket investment can be recouped in electric bill savings in less than one year.

Dr. Bruce Richards, who sits on the Battlement Mesa Metropolitan District Board, which oversees the center, said, "The board was enthusiastic with the prospect of new modern lighting, coupled with the generous Xcel Energy rebate, grant funds from Garfield County Federal Mineral Lease and ongoing savings."

Without the Garfield Federal Mineral Lease District grant, the investment would have paid for itself in four years—a 25 percent return on investment.

Because of electric rate changes, Huber likes to describe the difference in kilowatt-hours, which show the building's actual energy usage. She offered these before-and-after comparisons:

- December 2011: 45,512 kilowatt-hours (kWh) vs. December 2012: 35,852 kWh, a 22 percent reduction.
- January 2012: 44,148 kWh vs. January 2013: 33,378 kWh, a 25 percent reduction.

"That's huge. Huge," Huber said. She has noticed another benefit from the overhaul—less heat from the lighting.

Because of the reduced heat from the LED lamps, the facility's cooling system doesn't need to be cranked as high in the summer, Huber said.

"One thing that staff noticed in December, January, and February, after the lighting project was completed, was that we actually had to turn up the heat a bit. We didn't realize how much ambient heat the incandescent bulbs and halogens were producing."

Meanwhile, users of the recreation center seem to not have noticed any changes and they still visit, day in, day out, to take advantage all the center's offerings.

"I think it's one of those projects that, unless you see them actually working on it, it's not something that you notice," Huber said.

"I think that's good in a way, because it means we didn't reduce the lighting. The quality of the lighting in the building is as good or better than it was before. Also, it doesn't take 10-15 minutes for the lights to get fully bright.

"Overall, it was a good transition. We were very fortunate to be able to obtain the funding to complete a project that will benefit the center for many years to come," Huber said.

For more information about cutting energy use in large buildings and associated utility rebates, contact CLEER at 970-704-9200 or visit www.garfieldcleanenergy.org.

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