



## Case Study: Mittleider Residence

Silt, Colorado

By Cam Burns, CLEER



### Silt Mesa Resident Puts His Home Through an Energy Makeover

Silt Mesa resident Ron Mittleider is proof that doing the little things does matter. In the past nine months or so, he's made several modest improvements to his Western Colorado home, and he's now finding that those straightforward steps to improve the energy efficiency of his home have done just that—and the results are considerable.

In February 2010, he spent \$173.75 on electricity. In February 2011, he spent \$123.02—a savings of 30 percent. In April 2010, he spent \$129.86 on electricity. In April 2011, he spent \$76.49—a savings of 39 percent.

While his electric savings for the entire January-to-August period 2011 were more modest, 19 percent is not bad. And, Mittleider is hardly done with the energy upgrades he plans to do at his picturesque Silt home.

#### The Upgrades

- Improved attic insulation
- Caulking in leaky walls
- Furnace service
- CFL lighting
- **19 percent electricity savings**

Mittleider, an engineer at Schmueser Gordon Meyer (SGM), joined the Garfield Clean Energy Challenge last fall. In November, Mittleider got an energy audit from one of his colleagues at SGM, Mike Suhrbier. Suhrbier did both blower door and infrared camera tests. The biggest surprise to Mittleider came when the blower door test was done in a room that featured wood paneling with tongue-and-groove joints.

“When they did the air test, I was amazed at how much air came through those rooms with the wood ceilings,” he said on a tour of the house. “Just that tongue and groove, that little gap, is a big passageway for air. When we had the air test going you had to push super-hard to get this [outer] door open.”

The audit pointed to the first step for Mittleider: caulking. Mittleider caulked the joints between the ceilings and walls in the rooms with the tongue-and-groove wood paneling, as well as the paneling joints, with clear caulk. He also bought a fridge and a freezer that are more energy efficient. Mittleider hired Climate Control Company to serv-



Ron Mittleider made numerous upgrades at his Silt Mesa home, but still has plans for more—wrapping his hot water tank, for example. Photos by Cam Burns

ice his home furnace (it had not been serviced since 1993 when he and his wife built the house).

Servicing the furnace—especially older furnaces—is important as furnaces that run inefficiently burn more energy to produce the same

#### Lessons Learned

- Small improvements are worth the effort and can have impressive results
- Certain types of wood joints can be wildly “leaky”
- Attic insulation is extremely effective



Left: Ron Mittleider with his Silt Mesa home.

Right: Mittleider believes it's mostly the vast amount of new insulation blown into his attic that has cut his electricity bills.



amount of heat. In addition, these “tune-ups” may address safety issues in regards to carbon monoxide.

Mittleider also replaced a number of old light fixtures with more energy efficient models and put weather-stripping around ceiling penetration openings. He also installed a carbon monoxide detector. The most noticeable energy upgrade, however, was the insulation.

“The biggest thing we did was get InsulVail to spray 7–8 inches of insulation into the ceiling in December [2010],” Mittleider said. “We also added six roof vents to get the hot air out of the attic faster.”

The new insulation boosted the thermal value of the roof from R-30 to R-49 and cost \$1,420. Mittleider got rebates for both the energy audit and the insulation.

The added insulation and vents mean that they don’t need to run the electric air conditioning system nearly as much.

The insulation made a “huge difference,” Mittleider said during an

August 2011 interview. “We’re probably running the air conditioner half the amount of time that we used to. I see it mostly in my garage. We just had loose insulation in the ceiling and in the summer-time the garage would get *really* hot.”

Mittleider had to leave the doors and windows open until late evening to cool the garage. However, with the new insulation, the garage is much more comfortable this summer and should translate to winter comfort as well.

More importantly, the Mittleiders’ electric bills have shrunk commensurately—about a fifth to a quarter, despite rising utility costs.

There are a several energy upgrades Mittleider is still hoping to make (e.g., insulation around the water heater, more caulking in certain rooms, foam sealing in the crawl space) but he’s been pleasantly surprised with the results so far.

“I had one [electric] bill this sum-

mer that was the lowest I’ve had in a long time,” Mittleider said.

Of course, so far he has only been able to track reductions in electricity use. His propane use is much more difficult to track, but he suspects that will be noticeably smaller, too.

“If it wasn’t for the Garfield Clean Energy Challenge, I probably would have never thought of doing upgrades in efficiency to my home. The cost of the updates have been very reasonable and easily implemented plus there were even rebates for many of them. The results have been very noticeable in comfort and on the pocket book. Many thanks to Garfield Clean Energy and its staff.”

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