



Powering Possibilities

INFRARED IMAGERY FINDS PROBLEMS IN BUILDINGS

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Infrared cameras create images using infrared radiation and thermography, the measurement of temperature with colors assigned based on different temperatures in the image. It's a powerful tool for energy efficiency because it can show where heat loss is occurring in real time, as well as many other anomalies, such as misaligned, compressed, damaged or missing insulation in wall and ceiling cavities. Taking an infrared (IR) image is safe, fast and accurate and can be done in complete darkness. If you need help finding suspect areas around your home or business, an IR camera can help you find where problems are occurring quickly and easily.

Gunnison County Electric Association has provided free energy audits for members since 1980, and purchased an IR camera with the assistance of U.S. Department of Agriculture grant funds for an energy audit grant GCEA received in 2011.

When visiting with members who have concerns about energy loss in their home or business and who want to know where it might be occurring, I have the IR camera handy. It never fails to impress. When you look at the images that accompany this article, you can see that there are different shades of gray with some dark areas throughout the images. In these images, the darker grays represent cooler temperatures, and the lightest grays represent the warmest temperatures in the image. Along the ceiling in the image on the upper left you can see the ceiling joists, which always appear cooler because they have a lower insulation value than the actual insulation, and there is definitely some sort of issue with the insulation in the upper part of the walls. In the image on the upper right, the walls are paneled and allow some air infiltration along each seam,



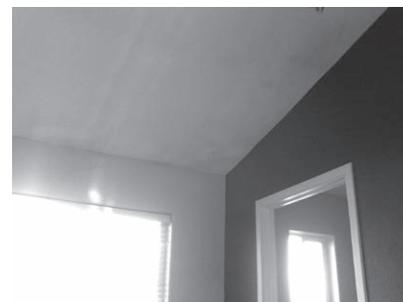
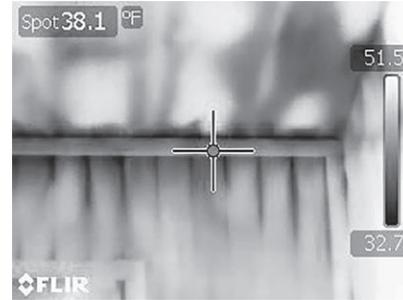
Alantha Garrison

along with some variations in the attic insulation. Irregular temperature gradients across the surface indicate that there is air infiltration and/or varying amounts of insulation in the wall cavity and ceiling. When colors are uniform in an IR image, there are not many temperature variations. When we see a lot of variation, there are probably some issues that can be resolved. Making changes typically leads to reductions in energy loss and increases comfort in the building.

The next images were taken looking at a drywall ceiling, which doesn't show any apparent issues in the digital image on the bottom right. However, with the infrared camera (bottom left), we were able to see that there was a really cold area at the eaves of the building. When we went into the attic, we could see that the reason for this temperature variation was due to the type of insulation that was installed in the attic. Strong winds had blown some of this insulation away from the eaves where the attic vents were located. In this case, it's a relatively simple fix to

install attic baffles to allow airflow but not disturb the insulation, and to realign the insulation to an even layer.

The next set of images (next page) show a couple of different things happening. There is a lot of air infiltration occurring around the ceiling beam, around the window trim and along the ceiling trim; you can actually see the cold air being pulled inside the building and across the surface where the wispy, finger-like patterns are seen. There are also cooler areas in the upper



part of the wall, indicating that there may be varying levels of insulation. The areas allowing air infiltration would benefit from air sealing, but unless you were taking the

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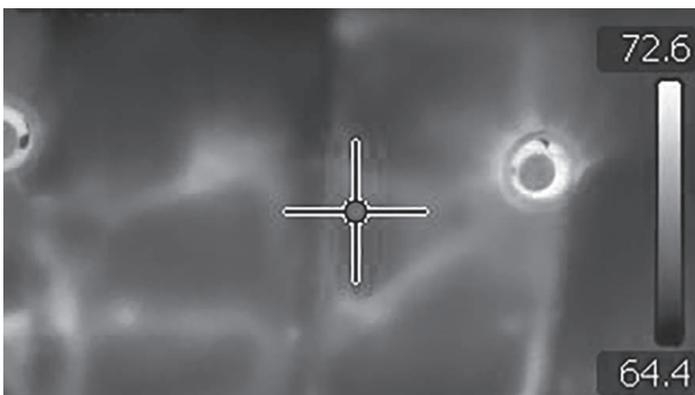
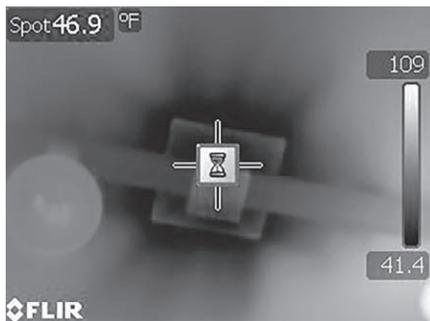
wall apart, you probably would not have to worry about the wall insulation.

A common area where heat loss can occur is around light fixtures, especially recessed fixtures. If the area around the light fixture is not sealed properly with a fire-rated gasket, air infiltration tends to occur.

We see cold air infiltrating in the winter (right image with darker grays around the fixture) and warm air in the summer (bot-

tom right image with lighter grays around the fixture).

During a remodel to install new recessed light fixtures (below), the insulation in this ceiling appears to have been compressed where wires for the new lights were run, and the exterior of the light fixtures also do not appear to be sealed tight.



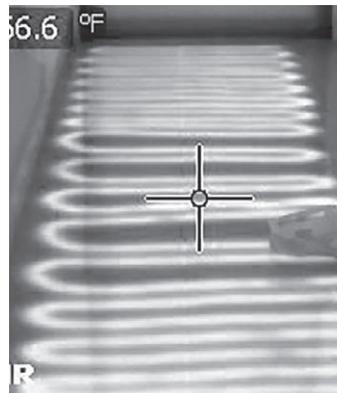
Air infiltration can occur around light switches and outlets.



Check attic and crawl space hatches.



Windows and doors are susceptible to leaks.



Infrared thermography can find other issues not related to the building construction or insulation. We have used the IR camera to confirm that radiant in-floor or in-ceiling heating systems are not working, or that they exist when the member did not know they were there. A high bill prompted a call to our office, and a thermostat that did not seem to be linked to the baseboard heaters

in the home provided a clue that something else may be using heat. As soon as I pointed the IR camera at the floor, we found our answer: in-floor electric heat.

Working with members to find and solve energy issues in their homes and businesses and using the IR camera to assist with that is one of my highlights of working at GCEA. If you want to learn more about your home or business via infrared thermography and how you can save energy and money, call GCEA today at 970-641-3520 to schedule a free energy audit.



COMMUNITY LOVE

GCEA employees donated time and money to help a family in need this year to make sure their Christmas was full of joy and happiness. This year we adopted a family with two young boys. Donations started rolling in the beginning of December and shopping took place on Wednesday, December 20. A group of employees enjoyed wrapping the gifts on December 21. GCEA employees donated so much this year that we had leftover money to help others in need. With the leftover donations, we bought 10 hams. Those 10 hams were donated to the Gunnison Country Food Pantry on Wednesday, December 20. We hope that the families we helped this holiday season had a special holiday. GCEA really appreciates the employees for always stepping up and donating to a great cause.

MAKE A CHANGE WITH A LITTLE CHANGE

Gunnison County Electric Association offers members the choice to buy blocks of green power to offset their usage and support renewable energy for an additional cost of 12 cents per 100 kWh block.



The program also allows members to offset 100% of monthly usage with green power. With this option, the green power fee will be calculated based on kWh usage.

Now, 25% of what you pay for green power will go into a local renewable fund to help finance local renewable projects in the future.

For more information on the Green Power Program, please visit www.gcea.coop or call 970-641-3520.



Gunnison County Electric Association
A Touchstone Energy Cooperative

ANNUAL MEETING NOTICE

CELEBRATING 79 YEARS

Announcing GCEA's 79th Annual Meeting

Tuesday, June 26, 2018

GCEA headquarters in Gunnison

Dinner and registration 5 p.m.

Business meeting begins at 6 p.m.

WATCH FOR WEAR AND TEAR

Electric blankets feel great during winter months, but it's important they are in good shape. Check that all of the wiring is snug. Loose wiring can result in electrical fires. When your blanket is in use, it should be flat so the coils aren't folded, which can create a fire risk and burns to the blanket. Be careful not to tuck areas of the blanket with electric wires or run cords under the mattress. This could create friction once you sleep on top of the mattress, which can cause damage or trap excess heat and pose a fire hazard. If you are not in the room, turn off your blanket.

FEBRUARY CO-OP CALENDAR

HAPPY VALENTINES DAY
February 14

GCEA Offices Closed
President's Day
February 19

Daylight Saving Time
Spring Forward March 11

EMPLOYEE ANNIVERSARIES

Paula MacLennan — Financial Assistant/
Benefits Administrator — 20 years

Chastity Miller — Billing Assistant — 11 years

Wally Baker — Meter/Substation Technician
— 10 years

Cindy Wells — Accounting Assistant
— 9 years

OPERATION ROUND UP

College tuition keeps rising every year, and it gets harder and harder for families to pay for it. Luckily, Gunnison County Electric Association members have an opportunity to support the educational funds of youth in the service territory by participating in Operation Round Up®.

HOW IT WORKS* Members who volunteer to take part in the program will have their monthly electric bills rounded up to the next highest dollar. For example, if your monthly bill was \$52.30, you would pay \$53. The extra 70 cents goes into a special account. Once you are signed up, GCEA will automatically round up the bill each month. Every little bit helps students with college expenses.

*Members are not required to participate, but GCEA would greatly appreciate the generous donation to the scholarship fund. These donations are not tax deductible.

OPERATION ROUND UP® ENROLLMENT FORM

Yes! I wish to contribute* to Operation Round Up®. Please add the amount to my monthly electric bill. I understand I may stop my contribution at any time.

_____ Round up my electric bill to the next highest dollar.
_____ I wish to make an additional monthly contribution of \$_____.

(Please print)
Name: _____
Account Number: _____
Address: _____
City, State, ZIP: _____
Email: _____
Phone Number: _____
Signature: _____

Please send completed form to: Gunnison County Electric Association | Attn.: Billing | P.O. Box 180 | Gunnison, CO 81230

*Not tax deductible.

DON'T TOWER YOUR POWER



It isn't just about how much energy you use - It's also about when you use it.

GCEA'S WINTER PEAK TYPICALLY OCCURS WITHIN 2 HOURS AFTER SUNSET BETWEEN 5 P.M. AND 7 P.M.

STAGGER APPLIANCES

Stagger the use of high power appliances by using the appliances at different times, so the total demand is lower than using them all at once.



1 PM 3 PM 5 PM

LEVEL YOUR LOAD

For example:

Avoid using an electric oven, electric water heater and electric clothes dryer all at the same time.



1 PM 3 PM 5 PM



“Like us” on Facebook

Check out our Facebook page for events at GCEA, energy efficiency tips, safety tips and so much more. “Like us” at Gunnison County Electric Association.