



Travers Ebling
Any St.
Santa Rosa, Ca.
95404

Basic Overview

The Ebling house is a 2-2, single story dwelling, with 1100 square feet and 10' ceilings. Mr. Ebling is interested in performing efficiency remediations and property upgrades. He requested a blower door test and infrared spectrometry.

The weather was perfect for this testing. Calm conditions, and temperatures in the 80's offered an excellent opportunity for the infrared camera.

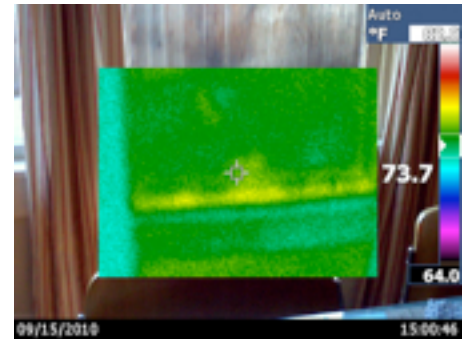
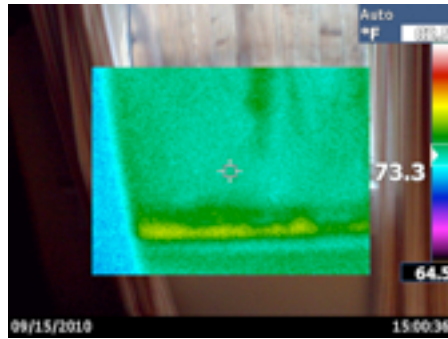
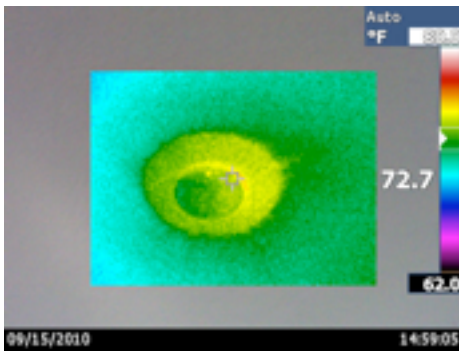
Blower Door

The blower door test produced 1512 CFM at -50 Pa depressurization. The Building Airflow Standard (BAS) for this house suggests .35 air changes per hour (ACH). At the current house volume of 11,000 cubic feet, the CFM 50 should be 1379 CFM. This data suggests the house is above the BAS suggested ACH, though the difference of 133 CFM is relatively nominal in the scope of leakage. The current rate of leakage is .38 ACH.

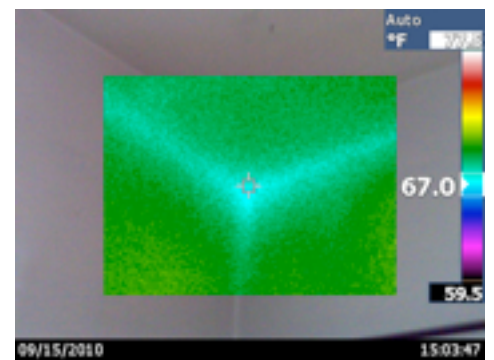
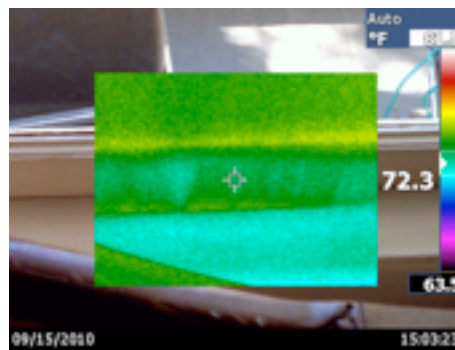
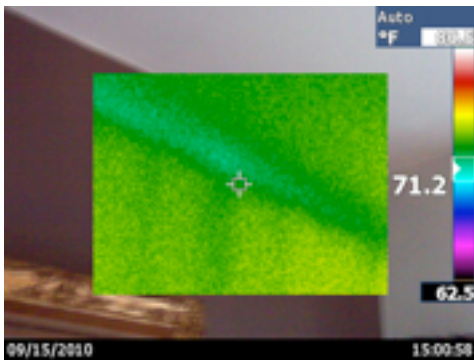
Infrared Spectrometry

The camera revealed and confirmed areas of leakage in the house. The predominant leakage sources were the can lights through out the house and heat lamps in the bathrooms. A floor temperature gradient was examined between the master bedroom and the living room. This displayed a 3 degree difference, indicating a higher insulation value across the plywood subfloor in the master bedroom. The windows display nominal leakage at the sash and sill. The baseboards and the original wood flooring displayed leakage through cracks and seams between the joints.

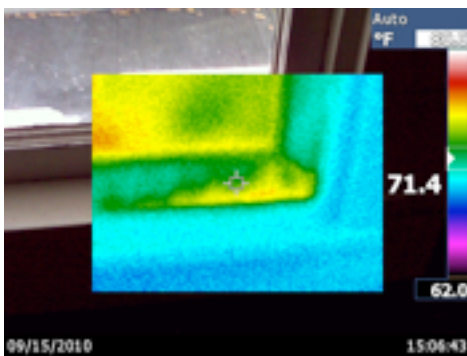
Images



The can light pulling air from the attic, and sash leakage in the dining room.



Leakage through the walls at plates, front window sash and corners.



Leakage in sons room front window, along the baseboards, and cracks in floor.

Conclusion

As per our discussions, Mr. Ebling came to the conclusion that the most imperative remediation is the sealing of the buildings envelope. We discussed what was the best option or area to start with. In my educated opinion it is the lighting. Recessed lighting that is insulation coverage rated (IC) is standard building code for the location of these lights. I recommend "airtight" models which are sold with a gasket which also seals the light to the drywall. This will prevent the infiltration of contaminants and slow the loss of BTU's across the envelope. This remediation will fulfill three functions: increase efficiency, increase the home's health, and the home's resale value. The efficiency will increase with the slowed stack effect which uses these air pathways to exhaust BTUs. The health will increase as the stack affect is slowed. The exhausting of air from the house requires make-up air. The make-up air, in this case pulled from the crawl space through the floor seams and baseboard cracks. With the stack affect halted, the house will no longer be infiltrating particulate and potential gases into the home. The resale value of the home will subsequently increase with the updating of the lighting systems in the home. This value is marketed both aesthetically, and through energy efficiency. I would recommend contacting SCEIP, as the data collected proves this level of remediation is an energy retrofit.

Thank You,

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