



FROM CDD and EMO: Energy Efficiency Audits

On November 7th, the Tribe hosted a visit by an expert in energy efficiency, and conducted a round of energy efficiency audits on the Tribe's multifamily (apartment) buildings. Stephen Gribble, an engineer with Association for Energy Affordability from Oakland, CA, visited the reservation for a full day of staff training and audits. Staff from CDD, the ROSS program, and EMO attended the training in the morning, then accompanied Mr. Gribble during the audits at the Coyote Mountain and Arrowhead apartments.

During the training, key concepts in energy efficiency in buildings, and on-the-ground examples were presented. Trainees had opportunity to ask and learn about options for maximizing energy efficiency in various construction scenarios. Some key points were:



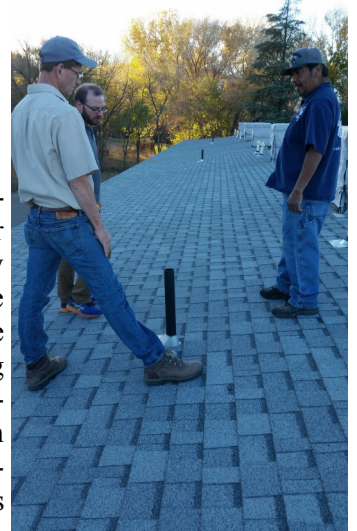
1. Aim to evaluate the building as a system in terms of energy movement, i.e. pressure and thermal differentials.
2. Fundamentals of how heat, vapor, air, and water behave, with a focus on heat for control of escaped energy.
3. Control layers in walls: wraps, insulation, what happens at windows & doors
4. Insulation: R values, costs, applications and tips
5. Ducting & plumbing: sealing, insulation,
6. Combustion appliances: heat ratings, temperature settings, types of furnace venting/air intake/likelihood of backdrafting of flue gases
7. Other appliances: refrigerators, lighting, electric water heaters
8. Water saving devices in toilets, laundry machines, faucets/aerators, showers.

During the audits, a representative sample of 3 homes and 1 non-residential room were inspected as per the AEA protocol. This included:

1. Testing for water plumbing temperature differences, and for CO emissions
2. Accounting of heat ratings, wattage, and flow rates of installed devices
3. Inspection of areas with ducting and ventilation of flue gases (furnaces)
4. Inspection of attic insulation where possible.



These audits conducted for the Tribe are a criteria-based assessment of energy loss in a building, rather than a pass/fail test for any standard. The goal is to identify potential gains in energy savings through modifications of 1 or a combination of the building's systems, materials, or installed devices, and the building's opportunity & eligibility for modifications including appliance upgrades, PV energy systems, and maintenance practices related to preserving system parts and materials. Though reports are pending, we were informed that the apartment buildings' water heaters and furnaces are state-of-the-art appliances and installed to the best optimization.



Photos, clockwise from top: Inspection of venting below cooler; south facing rooftop on Arrowhead apartments, cooler inspection from above on Coyote Mountain, testing for CO levels with oven on.