



Auditor Worksheet

Energy Auditors have to learn as much about the house they are auditing as possible in order to make smart choices for how to improve its energy performance. Auditors can use their diagnostic tools to determine many things, but some details are simple observation and calculation. Answer the questions below to see what you have learned from the SimBuilding house.

1. Auditors use occupancy to estimate water use and required ventilation in homes. How many people should we assume live in this home? _____ (HINT:As a general rule, occupancy is calculated as the number of bedrooms plus 1)
2. Take note that the house has a pitched roof. Is the attic insulated? _____ If yes, where is the insulation located? _____ Is the attic part of the “conditioned” living space? _____ (Y/N)
3. The square footage of the conditioned space on the first floor is roughly 1,170 square feet. How many floors (stories) does the house have? _____ What would you estimate to be the house’s total conditioned square footage? _____
4. While in the attic, are there any gaps in the insulation? What rooms would potentially be affected by missing insulation? _____
5. Locate one hotspot that clearly illustrates missing insulation. Which room is it in? _____ Why do you think this spot is uninsulated?
6. Locate one hotspot that clearly illustrates air leakage. Which room is it in? _____ Why do you think this spot is leaking?
7. If you were creating a work order for this home, what are some problems you feel work crews should address? Please list the TOP 3 that you feel are the most important. Use the in-game map to identify rooms.
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8. The front of the house is oriented to the north. The occupants have complained that, while the Master Bathroom gets very warm in the mornings year-round, the Master Bedroom and Bedroom 1 seem to be cooler than the rest of the house during the winter. Can you identify three reasons this may be the case?
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9. Most air-sealing protocols call for sealing high and low leaks first. With the blower door running, the house shows an air leakage rate of 3,000 CFM₅₀/sqft. Given the retrofits that have already been done to the house this is an improvement, but for a house of this size, ideal would be 2,340 CFM₅₀/sqft. Can you name three places that could benefit from additional air sealing?
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10. The house’s furnace has an efficiency rating of 70% and runs at 125,000 kBtu/hr. After fixing the air-leakage and insulation issues, the house should only need 45,000 kBtu/hr. The extra energy costs the family \$200 per year. If a new properly-sized and efficient furnace costs \$1600, installed, how many years would it take to recoup the cost of a new furnace? _____ Do you think it’s worth recommending the furnace be replaced? Why?