



Case Study Provided by Advanced Home Energy



Client in Walnut Creek, CA

Mr. Henry has lived in his house since April of 2008. Since moving into his home he has had on-going complaints about home comfort and his high energy bills (average of \$480/month during winter). He was also concerned about the duct work being potentially dirty.

Audit Summary of findings (see pics next page)

- Thermal boundary is very poorly insulated. Approximately 20% of attic missing insulation and many areas insulation is not correctly installed
- Fiberglass insulation is touching recessed lights which are not rated for contact with insulation. This is a code violation and potential fire hazard.
- Significant air infiltration occurring through unsealed gaps in attic
- Furnace hasn't been serviced in a long time.
- Duct system is not insulated at plenums (connection boxes) and boots
- Duct system is leaking air into attic due to poor connections and use of duct tape to seal connections (duct tape is not rated for use with furnace ducts)
- Dirty boots seen when grills are removed

Audit Pics: The following problems were discovered during the hour long assessment:



1. Missing Insulation on attic floor



2. Poorly installed insulation on attic floor



3. Uninsulated knee-walls



4. Fiberglass touching recessed light



5. Leaky boots (using duct tape)



6. Uninsulated a leaky return plenum



7. Looking inside very dirty duct register



8. Electric furnace for primary heating

Summary of remediation work

- Sealed all penetrations from attic to conditioned space to prevent excessive drafts. Sealed around recessed lights, around duct supply plenum, boot penetrations, electric and plumbing penetrations.
- Fixed attic insulation
 - Fixed insulation that was currently in place to have it touch the thermal boundary
 - Installed Cellulose stabilized borate formula blown-in insulation to R-38
 - Attic ruler every 300 sq. feet
 - Insulated attic walls with encapsulated fiberglass
 - Telescoped hose over vaulted ceilings and blow insulation in these cavities. NOTE: because we could not see this area above the ceiling we could not assure complete coverage in these areas.
- Cleaning of Duct System – Opened up 11 x registers and scrape out inside of boot, vacuum inside of boots and close.
- Pressurized duct system with Duct Blower, sealed system using mastic and metal tape to reduce leakage. Results: reduced leakage from 230 CFM to 127 CFM

Mr. Henry was extremely pleased with the quality of service and results of the work. According to Mr. Henry, “The work was very good. I am looking forward to feeling the difference and seeing a lower utility bill.” While our crew was packing up the truck to go home, several neighbors approached our foreman to inquire about the work we had done. They all discussed similar issues as Mr. Henry and expressed interest in making their homes more comfortable and efficient.

For more information please contact:

Advanced Home Energy
(510) 540-4860
www.advancedhomeenergy.com
License #877873