



PROPERTY INFORMATION

Austin Energy Electric Account Number:

Tax Assessor's Property ID: 497095

Owner NELSON JULIA Phone (h) (w)

Physical Street Address: 8507 APPALACHIAN DR

Unit: City: AUSTIN State: TX Zip: 78759

Mailing Address (if different):

City: State: Zip:

AUDITOR INFORMATION

Auditor: Justin Marler

Company: Energy Action. For more information about energy conservation contact us at (512) 380-0224 or at www.energyaction.com

Certificate #: 1998-103-BER-527 Affiliation: BPI-BA RESNET-Home Rater

Date of Audit: 06/02/2009

RECOMMENDATIONS

1. WINDOWS & SHADING

Installation or replacements of solar screens or other solar improvements recommended? Y N

Install (sq. ft.) exterior shading: solar screens, film or awning for windows facing the following directions:

S NW W NE SW E 85 SE

2. ATTIC INSULATION

Add R- of additional Attic Floor Insulation to bring the overall R-Value to an R-38.

Add R- of additional Vaulted Ceiling Insulation to bring the overall R-Value to an R-38.

Add R- of additional attic/knee wall insulation to bring the overall R-Value to an R-11.

Seal/Insulate openings between floors: Insulate Attic Hatch/Stair Box: Yes

3. HEATING & COOLING AIR DUCT SYSTEM

Perform Comprehensive Duct Seal Y N Repair/Replace/Insulate Ducts Y N

Replace/Add/Insulate linear feet of supply duct

Replace/Add/Insulate linear feet of return duct work

4. AIR INFILTRATION

Weather-strip all exterior doors Y N Caulk around all plumbing penetrations Y N

Seal Attic Hatch/Stair Box Y N

SINGLE FAMILY ENERGY AUDIT

IN COMPLIANCE WITH THE CITY OF AUSTIN'S ENERGY CONSERVATION AUDIT AND DISCLOSURE ORDINANCE

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HOME SPECIFICATIONS

Number of levels ² Year built ¹⁹⁷⁶ No Bedrooms ³
Conditioned square foot: ²⁰⁴² Utilities: Electric Natural Gas Propane gas

Foundation type: Slab Pier & beam

Type of home: single family duplex triplex four-plex condo town home

Type of Cooling System:

Central air conditioning – how many? ² Central heat pumps – how many?
Window Unit A/C – how many? Other - how many? No Cooling

Type of Heating System:

Central gas – how many? ¹ Central Heat pumps – how many?
Wall Furnace – how many? Electric-strip heater – how many? ¹
Gas space heater - how many? Hydronic space heater - how many?
Heat recovery system - how many?

Thermostats:

Manual Digital Programmable

Comments

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AUDIT PERFORMED

The audit performed at this address focused on the following areas:

1. Windows
2. Attic Insulation
3. Heating & Cooling Air Duct System
4. Air infiltration

This audit is tailored to meet the requirements of the City of Austin's Energy Conservation Audit and Disclosure Ordinance. The ordinance is designed to give you a clear understanding of the energy efficiency of your home.

Each section of this audit contains specific recommendations, when needed, to improve the efficiency of your property. Making improvements is not required as part of the ordinance, but the improvements are listed for you to aid you in making decisions about your property, along with the availability of rebates and other incentives that can help you pay for improvements.

1. WINDOWS & SHADING

The hot Texas sun shining through south-, east-, and west-facing windows and skylights can significantly raise indoor temperatures, causing comfort problems and higher energy bills. Newer homes and some homes with replacement windows have "low-e" windows which filter out the sun's heat-generating ultra violet ("UV") rays. Windows and skylights that are not low-e rated and receive an hour or more of direct sunlight on 40% or more of their surface area each day should be covered with solar screens or solar window films. This audit will look at these areas to determine any recommendations.

Existing Conditions

Type of windows (check all that apply):

Single-pane glass Double-pane glass Low-e glass Other

Skylights - Existing Covers Y N

Existing Solar screens or other solar improvements? Y N

Type of exterior shading (check all that apply):

Solar screens Solar film Awnings other

Solar Shading (sq. ft.)

S ²⁰ NW W ¹⁸ NE SW E ⁶⁴ SE

Skylights

Comments

Many of the solar screens on the east side of the house are worn out and rendered ineffective.

Recommendation

Installation or replacements of solar screens or other solar improvements recommended? Y N

Install (sq. ft.) exterior shading: solar screens, film or awning for windows facing the following directions:

S NW W NE SW E ⁸⁵ SE

Solar shading can save an estimated 25-30% of the cooling portion of the electric energy costs.

Incentives are available from: Austin Energy Y N

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2. ATTIC INSULATION

Attic insulation should provide a blanket-like thermal barrier between a home's indoor living space and the frequently hot or cold attic above it. Homes with too little attic insulation, or attic insulation that is installed improperly, heat up rapidly during summer and cool down quickly during winter, causing occupant discomfort and increased energy usage. The effectiveness of insulation is known as its "R-value," with a higher "R-value" providing better thermal resistance or protection. Austin Energy recommends attic floors have no less than R-22 insulation, with R-38 recommended. Vertical attic walls, or "knee walls," should have a minimum of R-11 securely installed. Insulating and sealing whole house fans, attic stairs and hatches, wall chases and openings between floors are also necessary.

Existing Conditions

Attic Insulation Type fiberglass batt Attic Floor Sq. ft. 800 Existing R-Value: Unknown
R-Value Per Inch: Fiberglass & Insulsafe 2.2 Cellulose 3.5 Rockwool 2.9
Cathedral Ceiling Insulation: Type Ceiling Sq. ft. Existing R-Value:
Vaulted Ceiling Insulation: Type Unknown Ceiling Sq. ft. 1,000 Existing R-Value: Unknown
Total R-Value of Attic
Knee Wall R-Value
Attic Wall R-Value Attic/Knee Wall Insulation Secured Y N
Openings between floors Y N Radiant Barrier Y N
Attic access is located in conditioned space Y N Attic Hatch/Stair Box Insulated Y N
Vented recessed lights/exhaust fans/flue pipes are properly dammed Y N

Comments

The majority of the attic is not accessible due to many vaulted areas. R-value and depth was not determined.

Recommendation

Add R- of additional Attic Floor Insulation to bring the overall R-Value to an R-38.
Add R- of additional Vaulted Ceiling Insulation to bring the overall R-Value to an R-38.
Add R- of additional attic/knee wall insulation to bring the overall R-Value to an R-11.
Seal/Insulate openings between floors:
Insulate Thermal Bypasses Y N Insulate Attic Hatch/Stair Box: Y N

Having your home properly insulated can save an estimated 25-30% of the cooling and heating season energy costs.

Incentives are available from: Austin Energy Y N Texas Gas Service Y N

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3. HEATING & COOLING AIR DUCT SYSTEM

Ducts are typically installed in attics, between floors, and in crawl spaces to provide airflow throughout the home. The duct system should be in good condition and have a leakage rate of 10% or lower, with an R-8 outer covering. The duct system must be properly sized or the efficiency of the heating and cooling system is significantly compromised. Conditioned air must flow easily into and out of rooms with the doors closed. This audit will review these areas to determine any recommendations.

Existing Condition of Air Duct System & HVAC Equipment: System 1

Duct type: Grey Flex Mylar Flex Duct Board Sheet Metal
Approximate R-Value ⁶ Condition: Good Fair Poor
Return Sizing: Adequate Inadequate
Return Air Plenum Sealed Y N
Duct System Test:
Pressure Test CFM Leakage ³¹⁷ % Leakage ²⁶

To make measurement, turn the Duct Blower ON and adjust fan speed until pressure reaches -25 Pa or acceptable HVAC system operating Pa, record the duct leakage flow rate reading from the digital manometer. Divide total leakage by total rated airflow for percentage of duct system CFM loss.

HVAC System Information

Location of Air Handler: Closet Garage Attic
Type of Air Handler: Up flow Down flow Horizontal
Condenser: Age ¹⁹⁹² BTU's ^{36,000} EER ^{9.6}
Furnace / AH: Age ¹⁹⁹² BTU's ^{75,000} AFUE ⁹⁰
System Tonnage: ³ Total System CFM ^{1,200} HVAC Delta T: ²⁰ Sq. ft. per Ton ⁴⁶⁷

Comments

Recommendation

Perform Comprehensive Duct Seal Y N Repair / Replace / Insulate Ducts Y N
Replace/Add/Insulate linear feet of supply duct
Replace/Add/Insulate linear feet of return duct work
Additional Return Air Y N

Incentives are available from: Austin Energy Y N Texas Gas Service Y N

*In homes the average Duct Leakage is 27%. Acceptable leakage should not exceed 10%.
Duct improvements can result in lower energy bills, greater comfort, and improved air quality.*

3. HEATING & COOLING AIR DUCT SYSTEM (CONTINUED)

Existing Condition of Air Duct System & HVAC Equipment: System 2

Duct type: Grey Flex Mylar Flex Duct Board Sheet Metal
Approximate R-Value Unknown Condition: Good Fair Poor
Return Sizing: Adequate Inadequate
Return Air Plenum Sealed Y N
Duct System Test:
Pressure Test CFM Leakage ¹⁰⁷ % Leakage ¹⁸

To make measurement, turn the Duct Blower ON and adjust fan speed until pressure reaches -25 Pa or acceptable HVAC system operating Pa, record the duct leakage flow rate reading from the digital manometer. Divide total leakage by total rated airflow for percentage of duct system CFM loss.

HVAC System Information

Location of Air Handler: Closet Garage Attic
Type of Air Handler: Up flow Down flow Horizontal
Condenser: Age ¹⁹⁹³ BTU's ^{18,000} EER ^{8.9}
Furnace / AH: Age ¹⁹⁹³ BTU's ^{Undetermined} AFUE ^{Electric}
System Tonnage: ^{1.5} Total System CFM ⁶⁰⁰ HVAC Delta T: ²⁰ Sq. ft. per Ton ⁴⁰⁰

Comments

The distribution ducting is not accessible. I was unable to determine condition and R-value.

Recommendation

Perform Comprehensive Duct Seal Y N Repair / Replace / Insulate Ducts Y N
Replace/Add/Insulate linear feet of supply duct
Replace/Add/Insulate linear feet of return duct work

Additional Return Air Y N

Incentives are available from: Austin Energy Y N Texas Gas Service Y N

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4. AIR INFILTRATION



Outdoor air leaking into a home by way of cracks, holes and leaky doors is known "air infiltration." Too much air infiltration, however, or air infiltration from undesirable locations, such as a hot, humid attic, can cause a home to become hot and humid during summer and cold and drafty during winter, both factors that impact comfort and energy usage. For optimal health and energy efficiency, Austin Energy recommends air changes in a home approximately every 2 to 3 hours.

Existing Conditions

Number of exterior doors ⁴ Number of exterior doors properly weather-stripped ⁴
Plumbing penetrations sealed Y N Attic access is located in conditioned space Y N
Fireplace Y N Vented to outside Y N Damper operable Y N
Internal Combustion Air to Closet:
 Gas Furnace Y N Grill in Door Y N Closet Door Weather-stripped Y N
 Gas Water Heater Y N Grill in Door Y N Closet Door Weather-stripped Y N

Comments

Recommendation

Weather-strip all exterior doors Y N Caulk around all plumbing penetrations Y N
Seal Attic Hatch/Stair Box Y N

Incentives are available from Austin Energy and Texas Gas Service through Air Infiltration and Duct sealing option.

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ADDITIONAL AUDIT INFORMATION

Home Water Heater

Fuel Type: Gas Electric Solar Tankless

Combustion Air Provided: Y N Timer attached to water heater Y N

Appliances & Other: (Only for appliances that will remain in home after sale.)

Description		Quantity	Pre 1993?
Refrigerator	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	2	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
Freezer	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
Dishwasher	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	1	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
Clothes Washer	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	1	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
Clothes Dryer	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	1	Y <input type="checkbox"/> N <input type="checkbox"/>
Pool Pump	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		
Timer attached to pool pump	Y <input type="checkbox"/> N <input type="checkbox"/>		
Standard Toilets	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	2	
Water Saving Toilets	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		
Sprinkler System	Y <input type="checkbox"/> N <input type="checkbox"/>	Year installed	(as per homeowner)

Recommendation

City of Austin's Water Conservation Programs

- Consider installing low-flow toilets, rebates are available.
- Consider replacing your old clothes washer with new water saving horizontal clothes washer, rebates are available.
- Consider having a free irrigation audit performed by City staff.

Austin Energy Power Saver Program

- Consider recycling your freezer and refrigerator. Recycling your secondary refrigerator can save up to \$100 annually on your electric bill. We pick up and recycle in an environmentally responsible manner, call 1-800-452-8685 to learn more. Austin Energy offers up to \$50 to recycle your working refrigerator/freezer.
- Replace manual or digital thermostat with a programmable thermostat which can help you save 5 to 10% on your heating and cooling cost, and provide greater comfort year round. Sign up and get a free programmable thermostat plus free installation, call 1-877-549-2774 for details.
- Consider installing an appliance timer on your electric water heater to save on your utility bill. Free installation of timers available for qualified customers, call 1-877-549-2774 for details.
- Replace incandescent light bulbs with compact fluorescent light (CFL) bulbs. Save up to 66% on your lighting costs by using energy-efficient CFLs. Austin Energy offers instant coupons on purchases of ENERGY STAR® CFLs at participating stores.

For more information about energy improvement incentives call Austin Energy's Power Saver™ Program at 974-7827 or visit www.austinenenergy.com

To find out more information on how your home uses energy, visit our Online Energy Analysis at www.austinenenergy.com/go/ECAD

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DISCLOSURES

Weather, equipment installation and electric usage will all effect actual savings.

There is no guarantee or warranty, either expressed or implied, as to the actual effectiveness, cost or utility savings, if you choose to implement these recommendations.



The Energy Conservation Audit and Disclosure is not required to be included in the sales contract nor the Seller's Disclosure form (Texas Real Estate Commission), but instead is a stand alone requirement of the City of Austin.