



**TERRALOGOS**  
GREEN HOME SERVICES INC

# TerraLogos Home Energy Report<sup>®</sup>



PREPARED FOR

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DATE OF INSPECTION

August 4, 2008

**Abridged from 24 Page Report**

INSPECTORS

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## Sustainable Contractors Network

Some of the recommendations in your Home Energy Report will require the services of qualified contractors. TerraLogos is your partner to get the work completed properly to obtain the best results.

To take some of the frustration and guesswork out of the home improvement process, TerraLogos offers our *Sustainable Contractors Network*. The Network includes pre-qualified contractors in the appropriate fields who understand the energy improvements we recommend and can perform the upgrades properly. You can proceed with confidence.

Please contact TerraLogos when you are ready to proceed. We can help you plan and budget your improvements, and then contact the appropriate contractors to start the process. We will send them your Home Energy Report<sup>®</sup> and discuss the project details. They will call you directly to schedule appointments, provide estimates and perform the contracted work. All contracts are made directly between the homeowner and the individual contractors.

The homeowner is always free to choose a contractor outside of our *Sustainable Contractors Network* or to make the improvements themselves.

The *Sustainable Contractors Network* encompasses a wide range of specialties including contractors to perform:

- Moisture remediation
- Roof and gutter repairs
- Air sealing
- Insulation upgrades
- Window and door repair or replacement
- General contracting
- Heating, Ventilation, and Air Conditioning – HVAC repair and replacement
- Water heater repair or replacement
- Solar and geothermal installations

Our sustainable contractors are selected for their quality, reliability, and expertise at performing the recommended improvements correctly. All contractors are licensed and insured. TerraLogos recommends you always request documentation from any contractor you hire (including a TerraLogos Sustainable Contractor) to establish that that each contractor is currently licensed and adequately insured.

**To take advantage of our  
*Sustainable Contractors Network*,  
contact us when you are ready to implement  
the projects recommended in  
your Home Energy Report<sup>®</sup>.**



## What We Observed

## Blower Door Infiltration Test

This test measures and identifies the air leaks that allow air to flow into and out of the home. Air is constantly moving into and out of homes through a natural process called *infiltration* and *exfiltration*.

In most homes, hidden leaks around the chimneys, pipe chases, and structural connections to the attic and basement account for more loss of conditioned air than the windows and doors. During high heating and cooling seasons, this constant flow of air significantly affects the home’s energy performance and comfort because air which has already been conditioned is continually lost through the air leaks. Then, additional energy must be used to condition the replacement air that flows in from the outside.

The Blower Door Test calculates the **Air Change Rate (ACH)** and the size of the **Equivalent Leakage Area (ELA)**. In addition, the **major leaks** are identified – the specific gaps, holes, seams and cracks that need to be sealed for improved energy performance. With the Blower Door depressurizing the house, each room and surface is scanned for drafts large and small. For the majority of single-family homes, air sealing these hidden leaks is the most effective single step to stop energy losses and start saving dollars.

### Test Results

The Blower Door Test indicates that air leakage in the house is high. The target for air sealing a new home is an Air Change per Hour (ACH) rate of 0.33 in normal conditions. This house tested at 0.78 ACH. This means that on a “normal” day with an average wind speed of 0 to 5 mph, all the air in the home would be replaced once every hour and 15 minutes or so. On a very cold and windy day (20 mph), the air change rate could be as high as one complete replacement every 4 to 5 minutes.

Outdoor Temperature = 90° F      Wind Speed = 0-5 mph

TEST AREA	VOLUME	AIR CHANGE per HOUR rate @ 50 PA	AIR CHANGE per HOUR rate @ NORMAL	FLOW RATE	EQUIVALENT LEAKAGE AREA
All Conditioned Space	16,000 cu. ft.	14.5 ACH	0.78 ACH	3,900 CFM	430 sq. in.

### Leaks were noted in the following locations, listed from the basement to the attic:

<b>Living Space</b>	Electrical outlets and switches	<b>Upper Areas</b>
Crawlspace access	Exterior doors: all	Recessed light fixtures (17)
Junction between slab and wood framing in bathroom	Baseboards: front & side	Ceiling fixtures: fans, lights
Leaks at wall/register joint	Bathroom exhaust fans	Whole house fan opening
Registers: supply and return	Cracks: paneling in rear bedroom	Attic drop down stair
Around wall AC unit		

## What We Recommend

## Fix Energy Leaks

### Improve Your Air Ducts

#### Observations:

- During the Blower Door Infiltration Test, air was observed flowing from both the return and supply registers. This indicates that there are leaks in the ducts feeding these registers, allowing exterior temperature air into the system and leaking conditioned air to the outside.



#### Additional concerns are:

- There are visible leaks in hard ducts.
- There are leaks at most of the air registers at the joint between the duct and the surrounding wall or floor finish.

#### Recommendations:

- Where duct leaks are accessible and visible, seal them using conventional duct sealing methods with mastic and foil tapes (not duct tape.)
- Where duct leaks are concealed, seal them with a systemic leak repair procedure, such as the AeroSeal® system by Carrier (See their web site at [www.aeroseal.com](http://www.aeroseal.com).)
- Seal the gap behind the air registers at the joint between the duct and the surrounding wall or floor finish.

## Seal All Air Leaks

#### Observations:

- Air leakage in the house is high, with an Air Change per Hour (ACH) rate of 0.78. The target ACH rate for a well sealed house is 0.33.

#### Additional concerns are:

- The unsealed top plates of the interior partition walls are a significant source of air leakage (below photo and IR image). These partition top plates are accessible at the attic floor underneath the existing insulation.

