



Thermal Image – Reds and Yellows Show Heat Loss

## PROGRAMMABLE THERMOSTATS MAKE A DIFFERENCE AT

During home inspections, the subject of setback thermometers is a frequent discussion. Intuition suggests using less heat during the winter or air conditioning during the summer when the occupants are absent or asleep would save on utility expenses. Sounds like a “no-brainer,” but what is the true saving when the cost to raise or lower the temperatures upon returning to the home or waking up is accounted for.

*Home Energy* magazine, in its November/December 2008 edition, reported a scientific study performed in Canada using two identically built two-story homes. Trials were conducted to determine actual energy saving from thermostat setbacks and to record house temperatures and recovery times. Both summer and winter data was collected. As with all scientific studies, reading this one is a yawner, but the conclusions are instructive.

The article can be found at [www.homeenergy.org](http://www.homeenergy.org). To summarize, during the winter, the lower the setback

temperature, the greater the savings. With gas heat at setback temperatures of 61 and 64 degrees Fahrenheit day and night during absences and sleep periods, savings were 13.4% and 10.4% respectively. Electric heat, savings were only 2.3% and 1.9% respectively, due to the slower recovery period with resultant greater utility use.

During air conditioning periods, the savings with the setback to 77 degrees Fahrenheit was 11% when averaging cloudy and sunny days. However, the data showed that living in home with a permanent setting of 75 degrees without adjusting the temperature for absent or sleeping periods resulted in a 23% savings.

The conclusion is to save by setting back temperatures during the winter. During the summer, if one can live in a home full time at 75 degrees Fahrenheit, set the temperature there and do not adjust it. Otherwise, play the “set ahead” game and live with 72 degrees when in the home.

## FROM THE DESK OF ARTHUR S. LAZEROW

### CERTIFIED HOME ENERGY AUDITS

Clients of Alban Inspections, the Realtors we work with and our friends all know that Alban has made a major move into the field of energy auditing for residential properties.

Understanding the energy utilization of a home is a complex process. It requires understanding of an entire new field of study, called Building Science, which relates the thermal properties of the home with moisture control and internal pressures to view the home as a living entity, rather than a pile of components.

To add these requisite skills to our home inspection knowledge requires a week long course and significant study. To become RESNET certified, a difficult exam is offered by RESNET. Joe Dempsey led the way for Alban home inspectors to become certified as RESNET Raters (the Ph.D. certification). The ground shook when I passed the exam and I can now say congratulations to Marty Blackwood and Rodney Shull for also passing the exam. Robert Montiel is next.

It is rare to have one company with five RESNET Rater residential energy auditors on its staff. This is a source of pride to all at Alban and assurance to our clients and to Realtors that Alban is prepared to offer professional, certified home energy audits based on RESNET standards, the industry's finest.

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FROM JOE DEMPSEY, ASHI ASSOCIATE INSPECTOR & ALBAN CHIEF HOME ENERGY AUDITOR

## Infra-red Camera Studies of Homes

As a home inspector, it is frustrating being unable to see behind walls and thru ceilings. ASHI standards do not permit destructive testing. We now have a toy with x-ray vision. The infra-red camera, also known as a "thermal imager," does not record light based pictures, as does a digital or film based camera. The infra-red technology "sees" heat and produces an image of heat patterns at the surface of materials.

For instance, during a chilly spring day, there is a significant temperature difference between the outside temperature and the more comfortable interior living space. Heat moves from hot to cold. Since wood is a poorer insulator than insulation itself, and areas of missing

insulation lose their heat the most, a thermal image of an exterior house wall from the inside will show different temperatures where studs exist, where insulation exists and dramatically where there is no insulation or there is moisture penetration. Cold air leaking around windows, doors and electric outlets will show up, and likewise for moisture, which has different heat retention characteristics than solid materials.

The consequence of thermal imagery is that an inspector, with proper training, can evaluate what is occurring behind and within walls. Frankly, the infra-red camera gives us x-ray vision as a diagnostic tool.

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