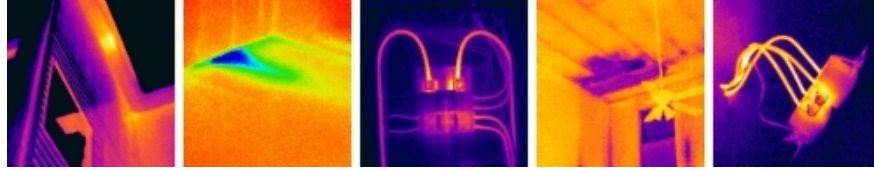


# *David A. Andersen & Associates*

## Infrared Thermal Inspection Report



7044 Bridgeport Dr., Nashville TN, 37221  
Inspection prepared for: Christopher Hahn & Angela Hahn  
Inspection Date: 2/28/2009 Time: 11:00am  
Weather: Lt. Rain; 37F

Inspector: David A. Andersen  
HI License #40, IR Level II & Building Science Thermographer# 1958  
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[www.ThermalImagingScan.com](http://www.ThermalImagingScan.com)

# Findings

## 1. Equipment

Flir BX320 27.4mm Lens

- S/N 25202715

## 2. Job description

- The client requested a follow-up survey after thermal imaging survey. The survey was conducted in the heating season. The previous inspection was conducted during the cooling season. Client requested verification of thermal anomalies detected with a Pyrometer (infrared thermometer).

## 3. Findings

- Repairs to the leaking HVAC system and increased attic insulation has made significant improvement since our last survey.

Thermal scans were taken under normal heating conditions and were repeated after depressurizing the building with the HVAC system.

A significant amount of air infiltration still exists at wall switch and plug receptacle boxes.

Air infiltration was noted between the floors and walls at all three levels. Significant air infiltration was noted in the second-floor and basement left rear bedrooms and at the basement right rear corner( rear wall).

There is apparent air leakage below the HVAC air duct hood at the exterior of the house.

There is also air leakage between the first floor and basement ceiling which is leaking out around the perimeter plate of the first floor wall/floor This leakage is detected on the interior as well as the exterior.

There is an indication of inadequate installation in the master bedroom which is also detectable through the exterior wall.

## 4. Conclusion

- Air infiltration through electrical receptacle boxes should be considered for repair as air infiltration results in significant loss of efficiency.

Air infiltration at wall/floor junctures can be addressed by removing the exterior vinyl siding at the point of leakage or by removing the baseboard and sealing the air leakage from the inside.

Though insulation was added at the eaves of the roof, there is still significant heat loss at these locations. Visual observations of lacking installation is apparent above the second-floor left rear bedroom.

- Heating and cooling load calculations were conducted on the areas of the house that had reduced insulation efficiency. Your billing cycle savings would likely be less than \$20 to repair these areas.

These calculations do not take into account for air infiltration however which is the primary efficiency loss detected during this inspection. Excessive air infiltration can easily exceed a 30% increase in your electric bill. It is recommended that you continue to address the air infiltration issues as they are substantial and will improve comfort as well as energy efficiency issues of the house.

# Thermal Scans

## 1. Thermal Scans



There is an apparent leaking air duct at the outdoor HVAC system. This will produce a considerable efficiency loss.



Indication of a leaking air duct from the interior of the house. Air is leaking between the basement ceiling and first floor.



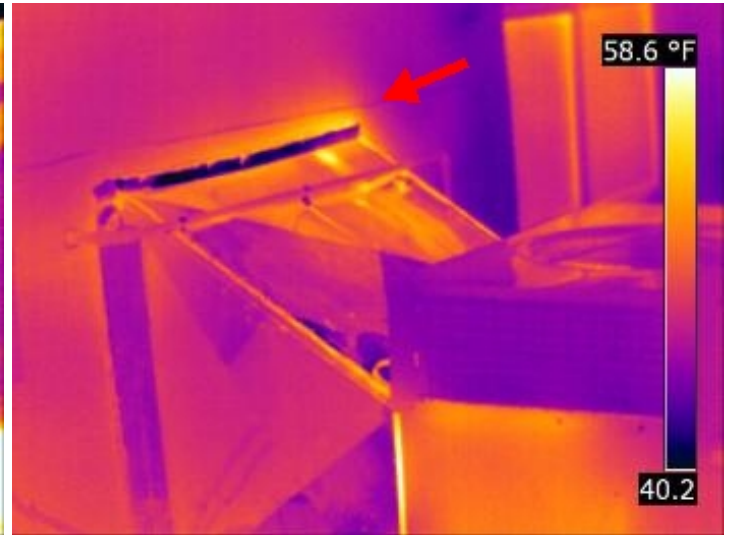
Indication of air loss at the supply air boot below the register.



There is still indication of heat loss at the junction of the ceiling and wall in the left rear second-floor bedroom. Air leakage past the installed insulation and insufficient insulation at the eve is likely creating this heat loss.



Inadequate insulation in the master bedroom is evident on the exterior wall of the house.



Indication of the HVAC air duct leakage.



Indication of air duct leakage at the unit and through the first floor wall. Note that there is air leakage along the entire rim joists just above the foundation.



Indication of air leakage at the ceiling/wall of the second-floor left rear bedroom. Also air leakage is evident adjacent to the window from floor to ceiling.



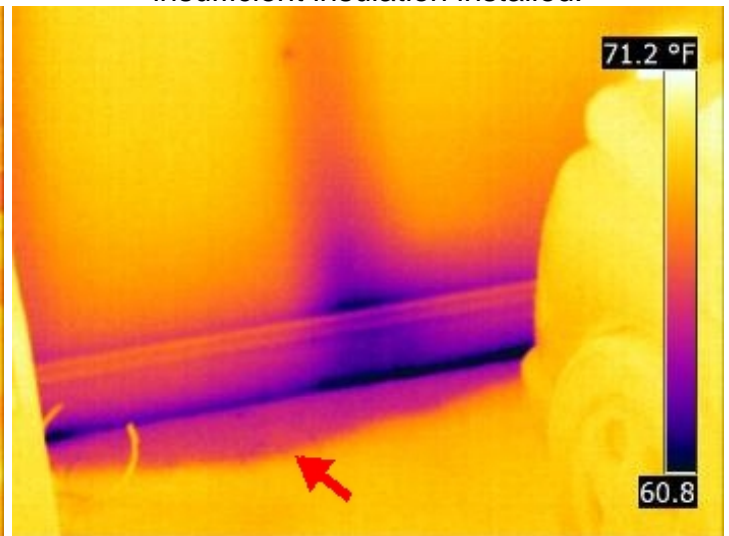
Air infiltration in the kitchen dining area at the electrical outlet and below the baseboard from a leaking wall framing plate.



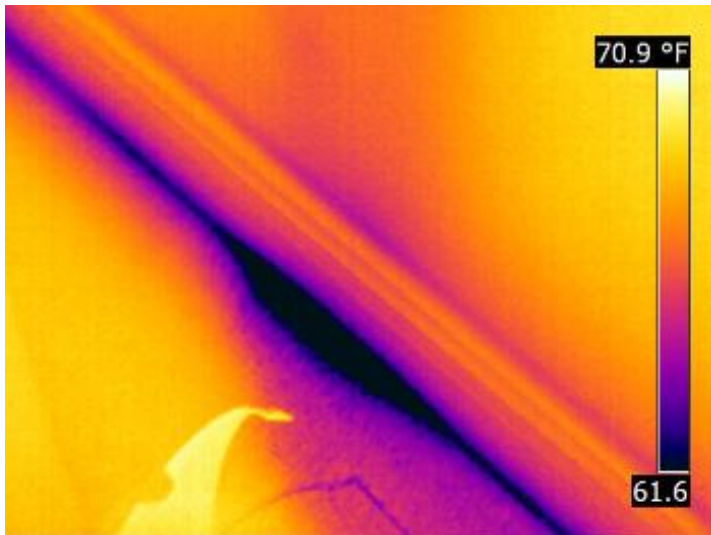
Indication of air leakage into the wood fabricated chimney/fireplace appliance. Interior infiltration has been sealed but external infiltration of the wall system is still occurring and there is likely insufficient insulation installed.



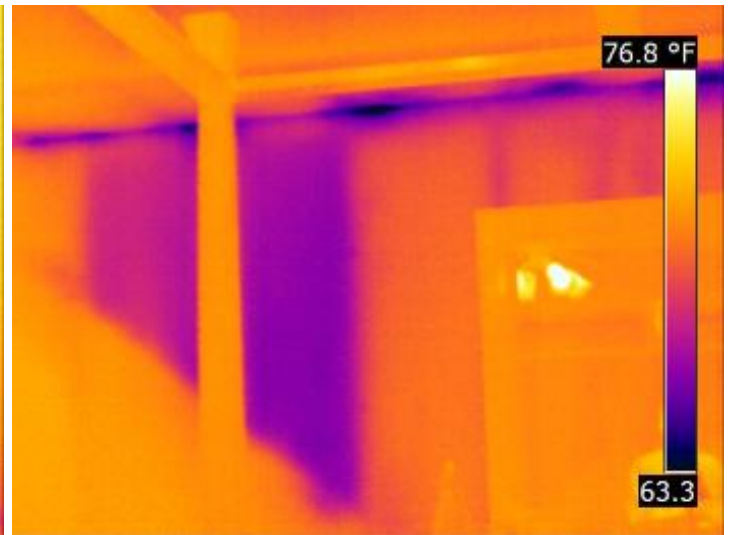
Air infiltration through the switch box from air infiltrating through the electrical service panel in the garage.



Air infiltration at the baseboard at the rear wall of the second-floor rear bedroom. Note the cool carpet against the baseboard where air is passing through the carpet.



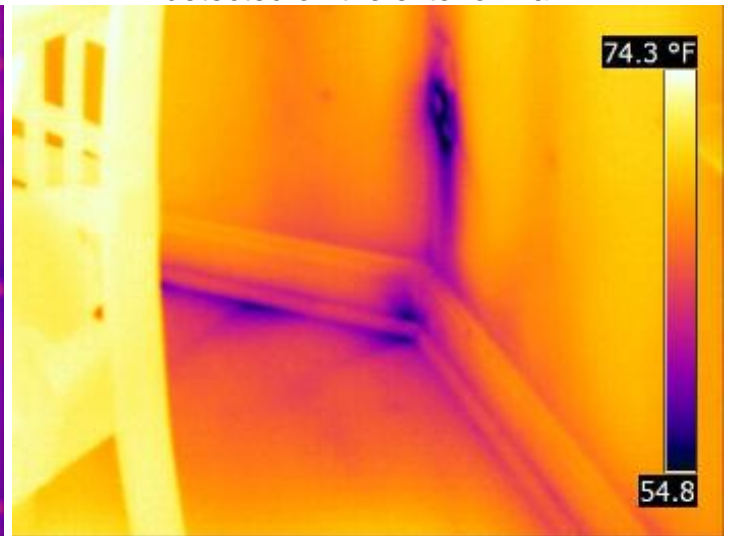
Air infiltration at the baseboard second-floor rear bedroom.



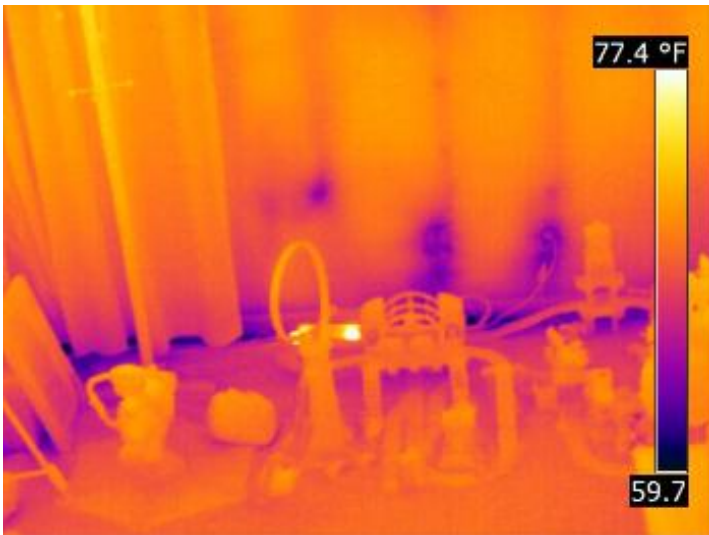
Inadequate insulation in the master bedroom viewed from the interior. Exterior heat lost is detected on the exterior wall.



Air infiltration through the light switch at the rear kitchen entry door.



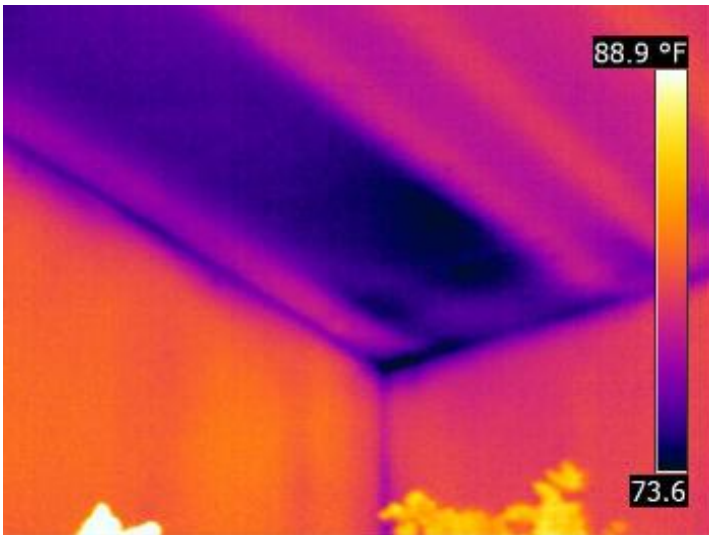
Air infiltration at a wall outlet in the kitchen dining area. Also air leakage from below the baseboard.



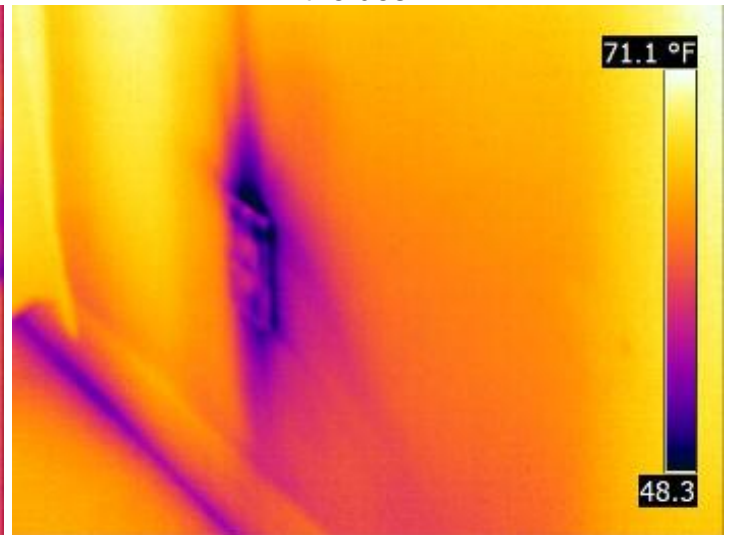
Air infiltration at wall outlets and baseboard in the basement viewed from the basement stairs.



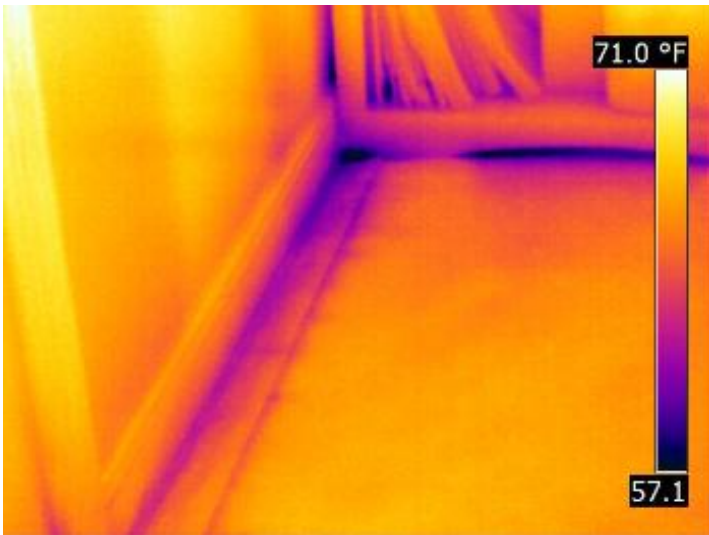
Air infiltration at the basement entry door as well as areas behind the office desk which is indicating considerable air infiltration from behind the desk.



Apparent air infiltration from below the kitchen eating area cantilevered floor/wall. This condition extends into the room as far as the closet door.



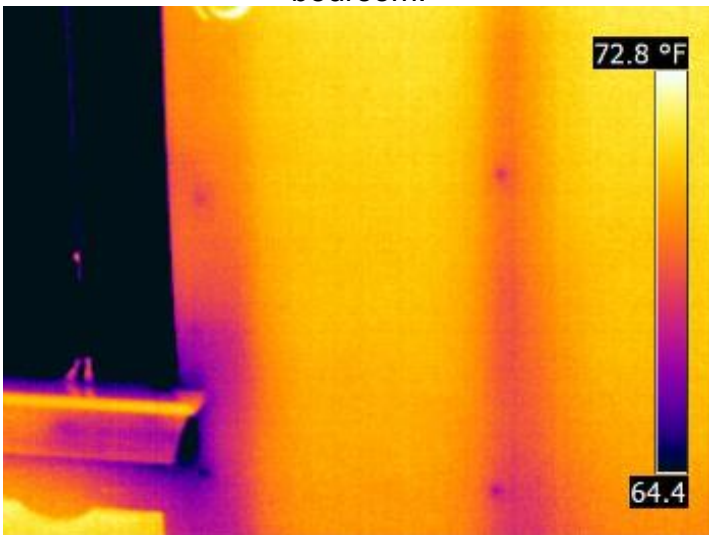
Air infiltration at the wall outlet in the basement rear bedroom.



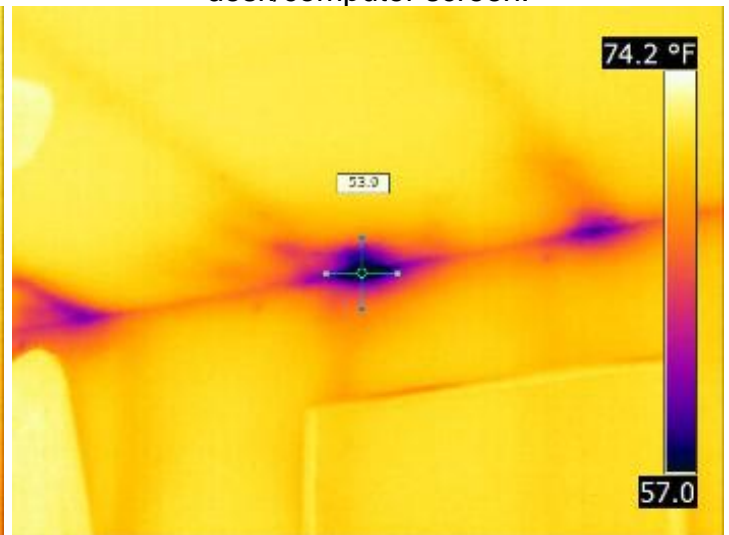
Air infiltration at the floor in the basement rear bedroom.



Air infiltration through the wall behind the office desk/computer screen.



Air infiltration at the windowsill in the basement bedroom.



Considerable low-temperature in the second-floor rear bedroom from inadequate insulation at the eave.



Report Summary