



**i-TECH**  
**ENERGY SERVICES**

Infrared Thermal Image Technologies

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## **Thermal Insulation and Heat Loss Assessment**

**Property Address:** xxxxxxxxxxx, x, Ohio xxx

**Client:** sample

**Report Number:** 090127c

**Date:** January 27, 2009

### **General Information**

**Structure Inspected:** Single Family Residence

**Year built:** 2008 per Delaware County Auditor site

**Start time:** 1:00 pm

**End time:** 2:15 pm

**Present:** Client

**Occupied:** Yes

**Weather:** Cold with snow/ice on ground and structure

**Outside Temperature:** 24°F

**Ground Condition:** snow and ice covered

**Front of Structure Faces:** North

## **Scope**

General thermal insulation and heat loss assessment of interior only. Property assessed for existence of exterior wall and ceiling thermal insulation and heat loss issues. Client complains of cold rooms. Room by room analysis of visible portions of exterior walls and ceiling areas performed for existence of thermal insulation. This assessment does not imply a complete home inspection or conformity to current building standards with regards to construction practices and R-values of existing insulation.

## **Observations**

Thermal inspection indicates multiple areas of air infiltration in soffit areas, walls and baseboard of front office, ceiling in right corner of dining room, multiple areas in entry way, 1<sup>st</sup> floor guest bathroom and bedroom, 1<sup>st</sup> floor laundry room, side entry way and half bath at the side entry hall, master bedroom, middle son's bedroom and bathroom, middle son's closet, oldest son's bedroom and daughters bedroom.

Thermal imaging indicates cold air infiltration at bottom center of sliding door on left side of eating area.

Thermal imaging indicates cold air infiltration at side entrance door and visual inspection found weather stripping does not seal completely.

Observed colder areas in the rooms directly over the garage. Due to ceramic tile on floor it is difficult to determine without destructive investigation if there is proper insulation and blocking in the floor under these rooms.

Visual inspection found vent in room directly under the office to be closed and room cooler than other areas in the basement. Vent was opened at by inspector.

Visual inspection of dormer/porch cover over side entrance found soffit vents at the area attached to the structure. The soffit vents are needed but this area should be sealed from the structure. Due to the cold areas inside that coincide with this dormer/cover, this area may not be sealed and allowing air to infiltrate the structure. To be certain intrusive investigation would be needed. The cold areas are the 1<sup>st</sup> floor laundry room, hall bath, and bedroom above.

## **Recommendations**

Recommend evaluation for additional insulation or redistribution of insulation in areas shown in pictures below.

Recommend adding insulation on walls in unfinished areas of the basement.

Recommend evaluation of insulation in floor of conditioned living space that is over the garage. This may need to be an intrusive investigation.

Suggest repair of weather stripping on bottom of sliding glass door on left side of eating area.

Recommend evaluation of dormer over the side entrance to verify a seal between the house and the dormer/porch cover.

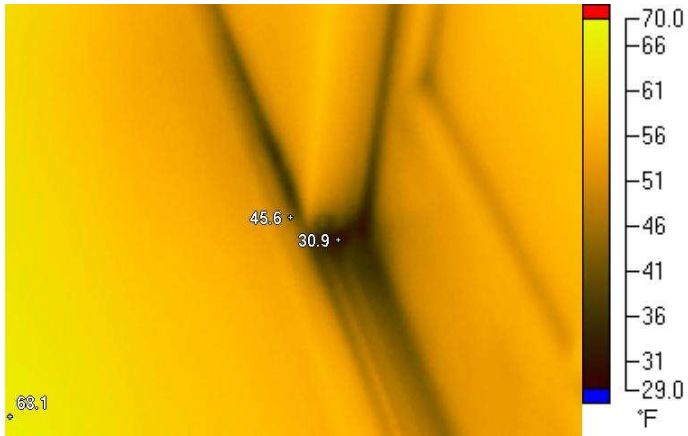
The pictures and images below are for reference. The Infrared images have three temperature values on the image. 1 is the highest temperature in the view, 1 is the lowest temperature in the view and 1 is the center point temperature.



Dormer/porch cover on side of house



Areas of concern at dormer/porch cover soffit vents

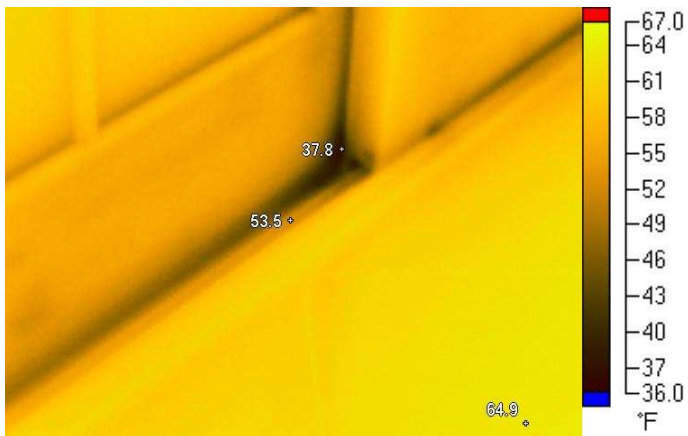


**IR000584.IS2**

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**Sliding door on left side of eating area.**

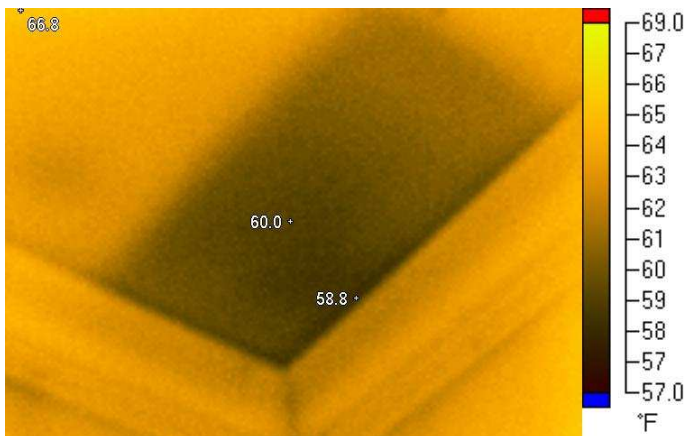


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**Sliding door on right side of eating area to porch.**



**IR000586.IS2**

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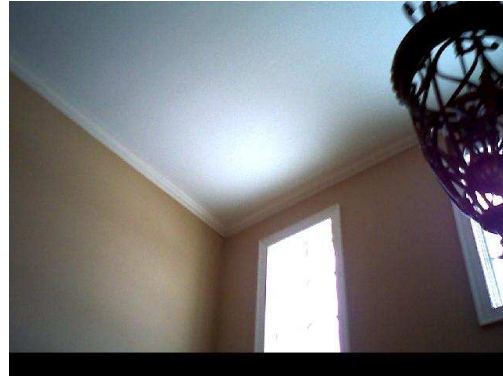


**Soffit in front right corner of main dining room.**



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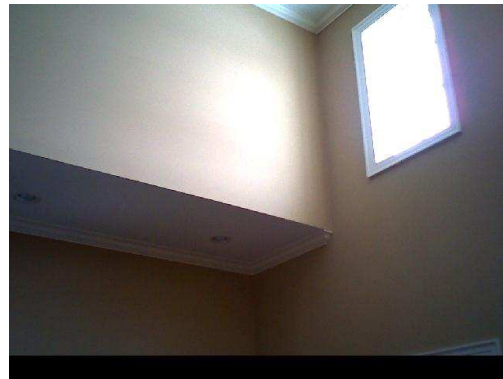


**Ceiling in entry way.**  
Temperature not terrible but insulation may be disturbed or not completely in place.

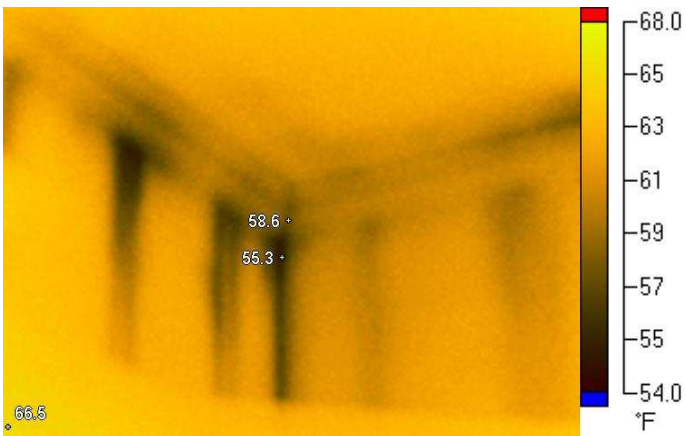


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**Side wall in entry way. 59.8 degrees in the dark area.**

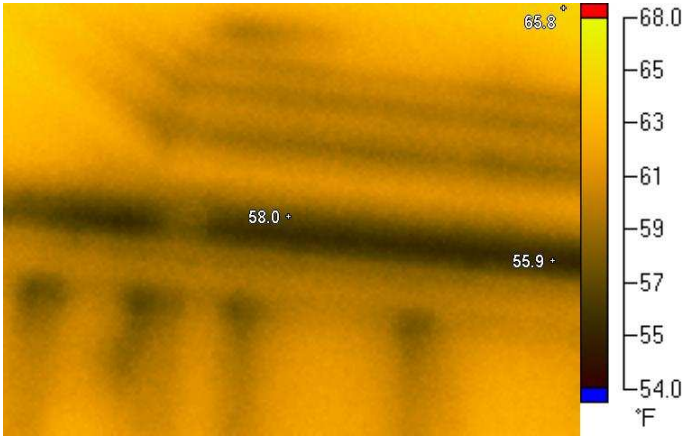


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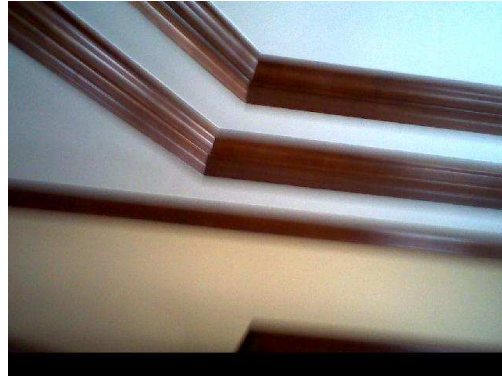
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**Office over cabinets**



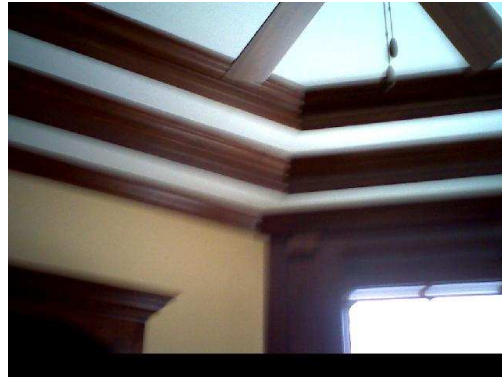
**IR000591.IS2**  
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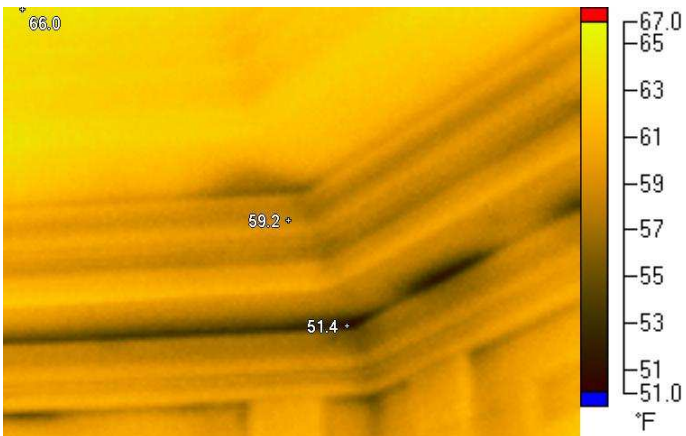
**Lower tier of soffit on left outside wall from office entry view.**



**IR000592.IS2**  
1/27/2009 2:14:44 PM



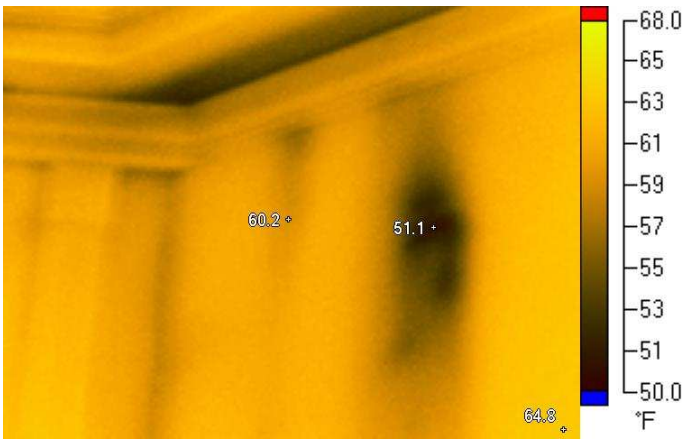
**Soffit area main office left of window toward the front.**



**IR000593.IS2**  
1/27/2009 2:15:07 PM



**Soffit area main office over windows. Lower tier.**

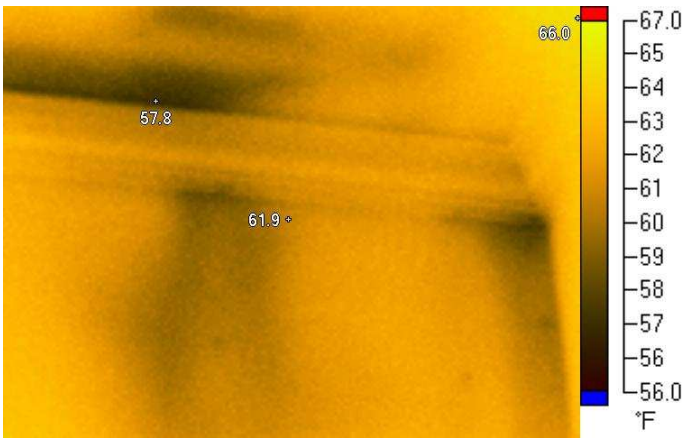


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**Main office right wall from entry door view.**

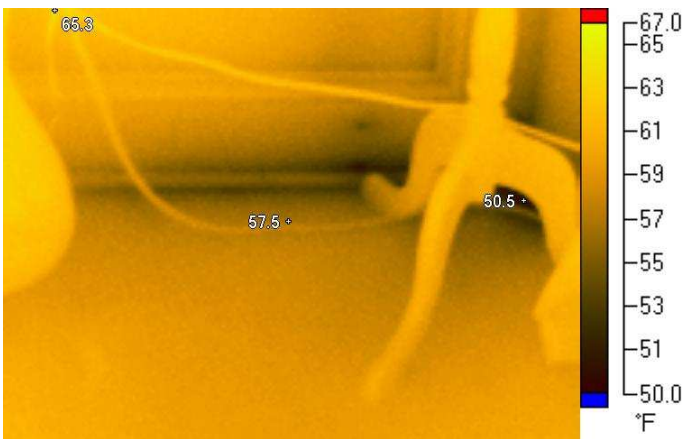


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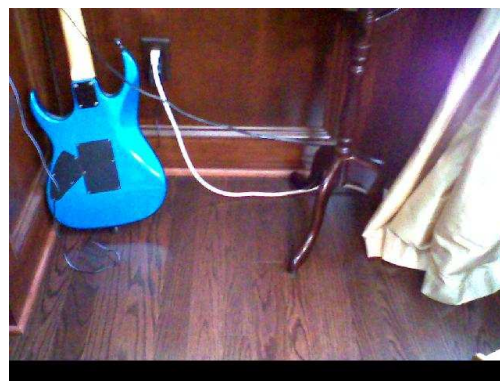


**Main office looking back at entry door. Wall to the right over cabinets. Not terrible but evidence of possible air infiltration**

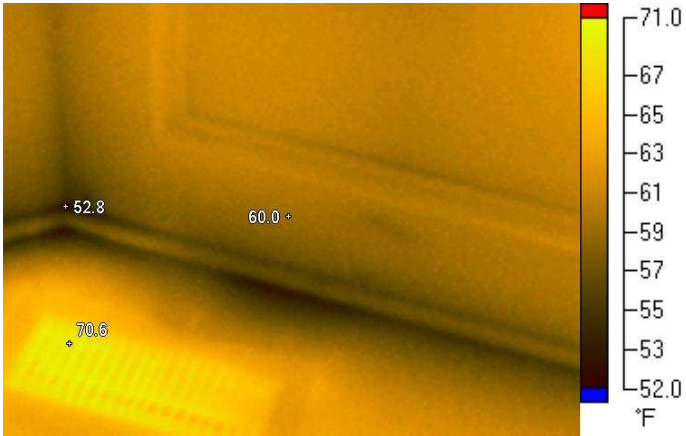


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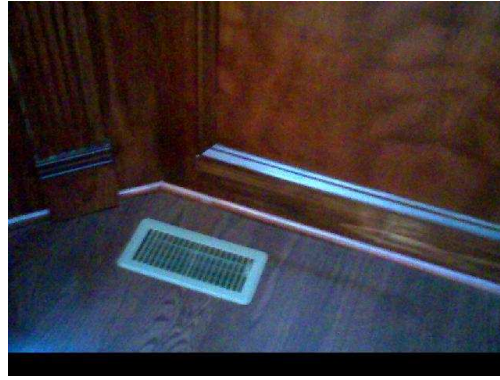
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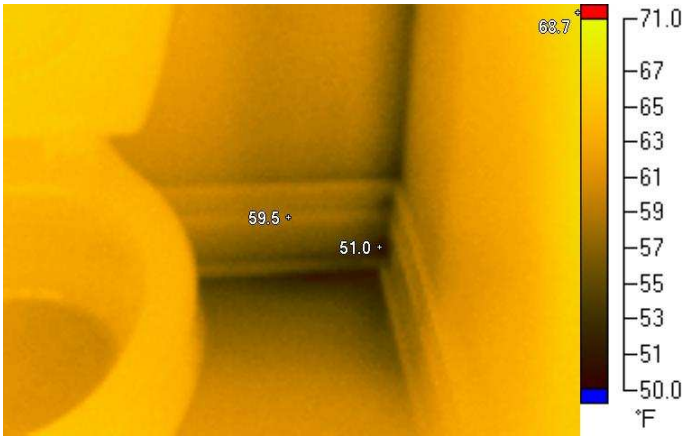
**Main corner front left corner at the baseboard.**



**IR000597.IS2**  
1/27/2009 2:19:10 PM



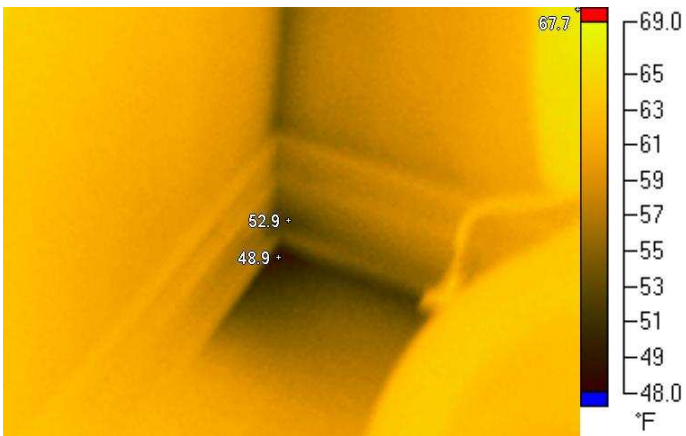
**Main office front right corner at the baseboard.**



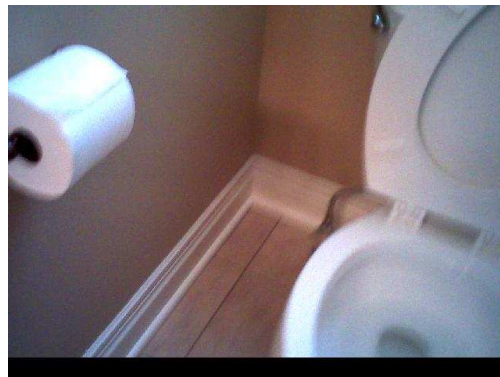
**IR000598.IS2**  
1/27/2009 2:21:10 PM



**Guess bathroom first floor right of toilet.**



**IR000599.IS2**  
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**Guess bathroom first floor left of toilet.**

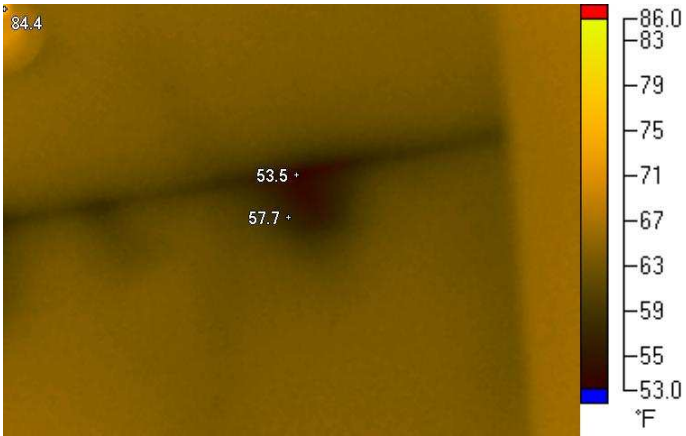


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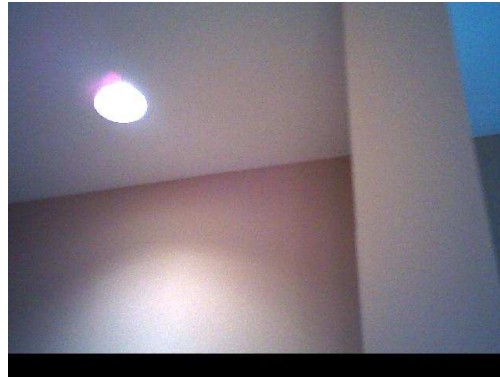


**Guess bathroom over shower.**



**IR000601.IS2**

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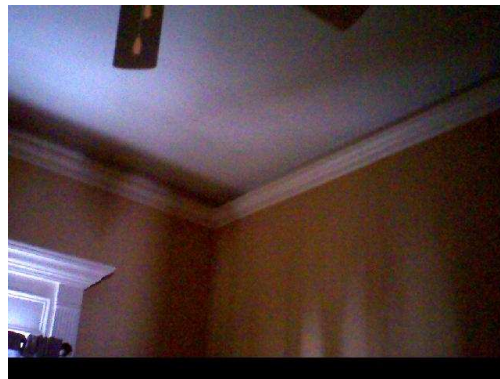


**Guess bathroom over shower.**

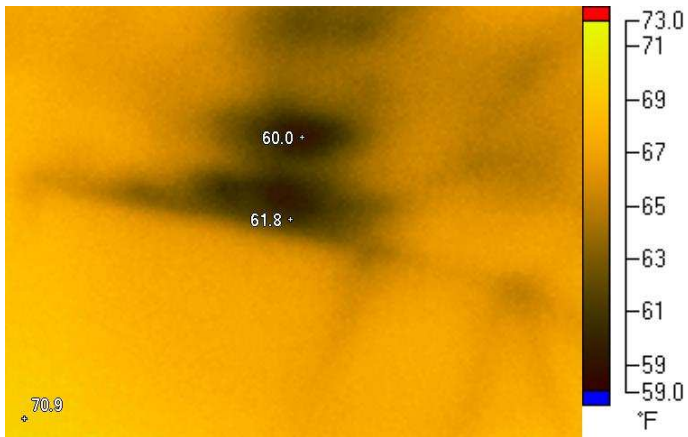


**IR000602.IS2**

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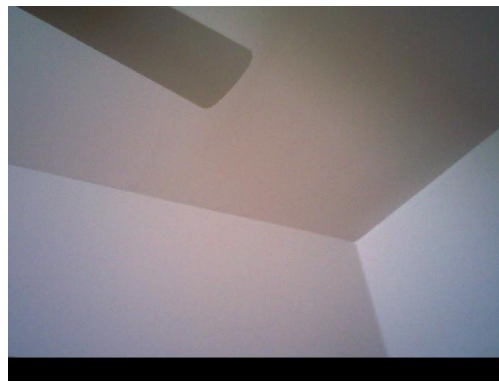


**Guess bedroom rear ceiling at corner.**

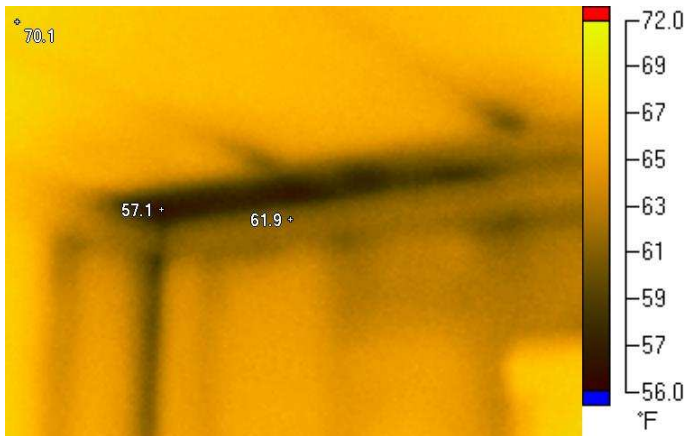


**IR000603.IS2**

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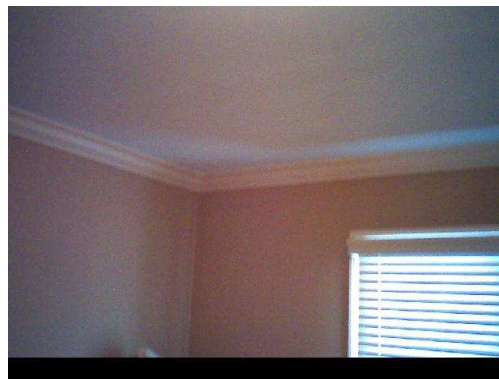


**Master bedroom ceiling right side of bed.**

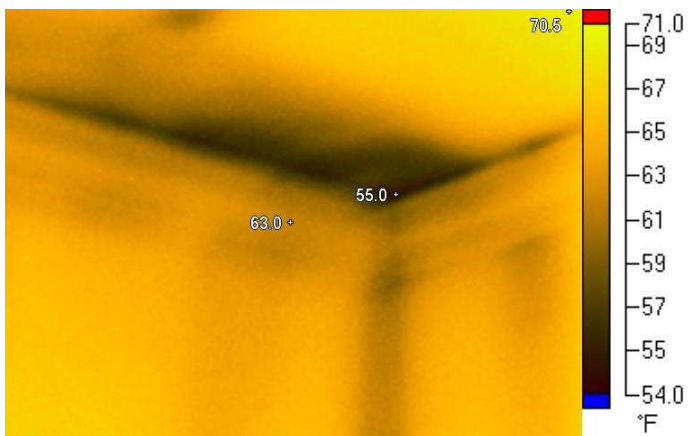


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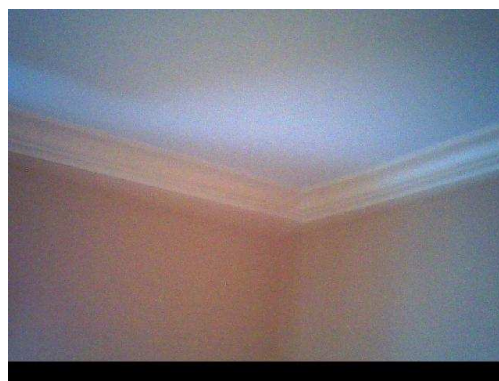


**Middle son room left ceiling above the window.**

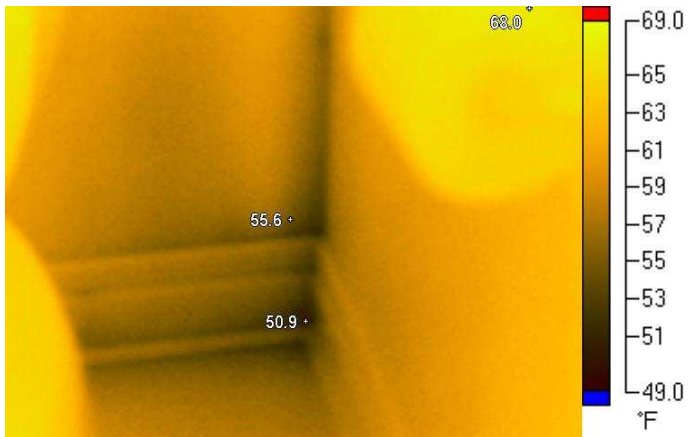


**IR000605.IS2**

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**Middle son room right ceiling above the window.**

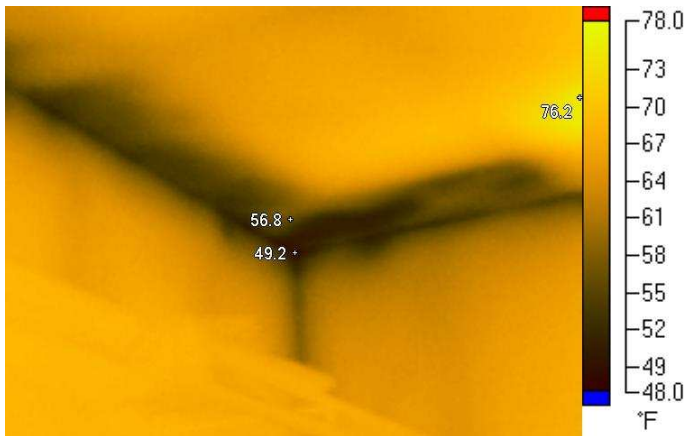


**IR000606.IS2**

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**Middle son bathroom right side of toilet. This is over the garage.**



**IR000607.IS2**

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**Middle son closet left rear corner.**

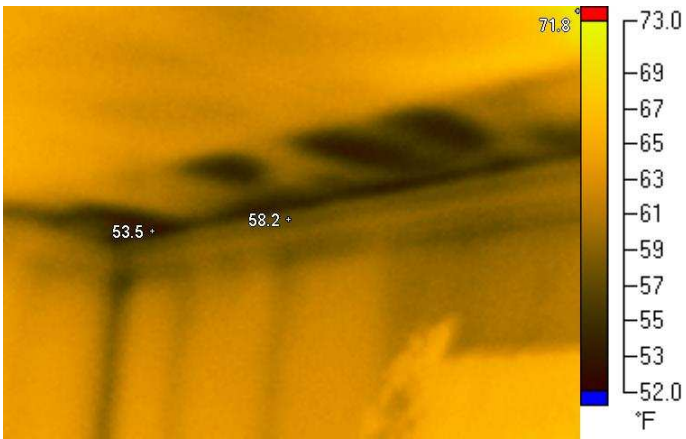


**IR000608.IS2**

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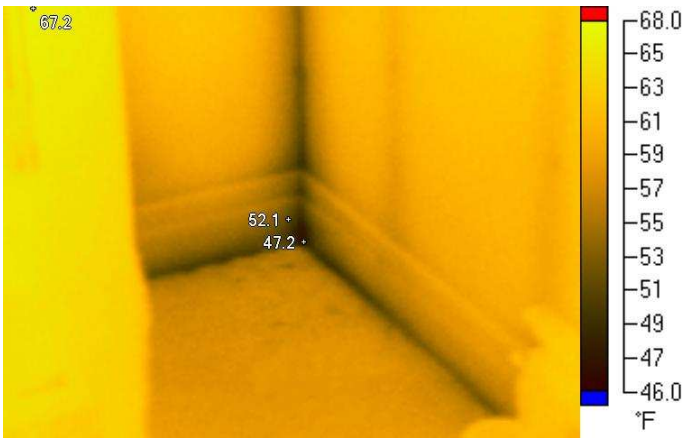
**Oldest son's bedroom right of bed at baseboard.**



**IR000609.IS2**  
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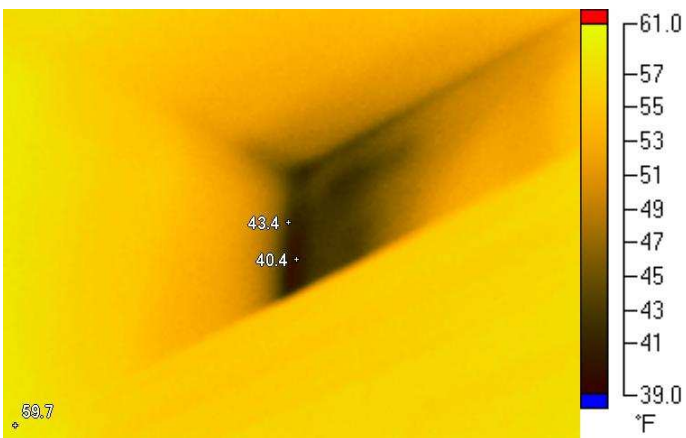
**Daughters room left rear corner ceiling.**



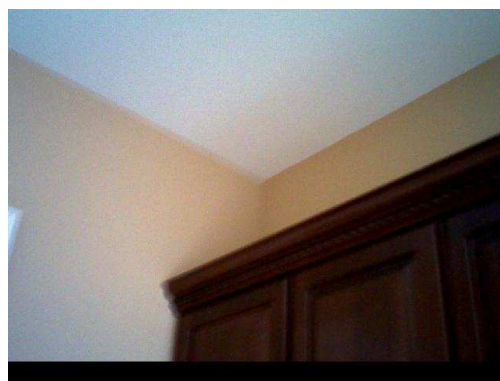
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1/27/2009 2:47:54 PM



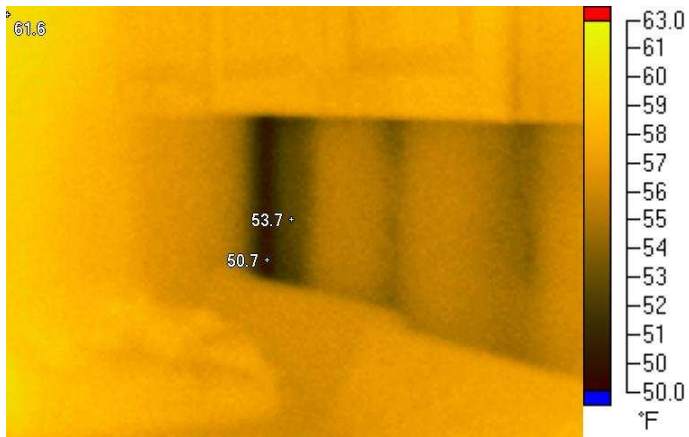
**Daughters room left rear corner baseboard.**



**IR000611.IS2**  
1/27/2009 2:51:16 PM



**Laundry room left wall. Exterior wall over cabinets. Angle is looking back at hallway entrance door. Coincides with dormer attached to house on exterior.**



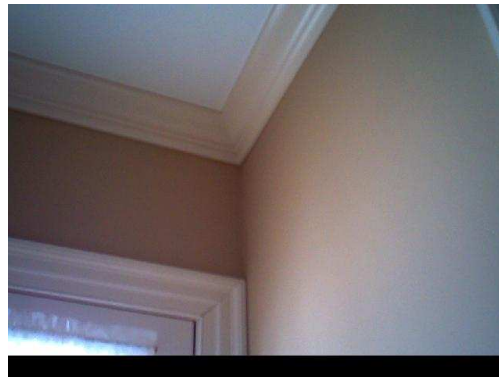
**IR000612.IS2**  
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**Laundry room corner next to dryer.**



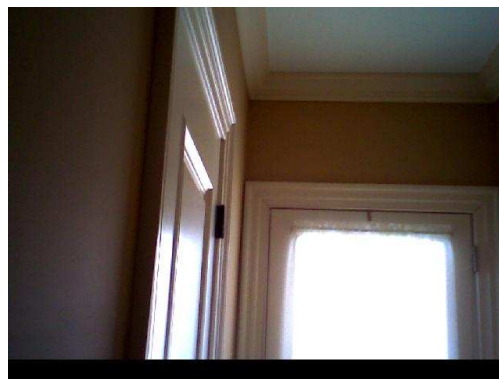
**IR000613.IS2**  
1/27/2009 2:55:08 PM



**Side entrance area at ceiling. Coincides with laundry room cool area.**



**IR000614.IS2**  
1/27/2009 2:55:53 PM



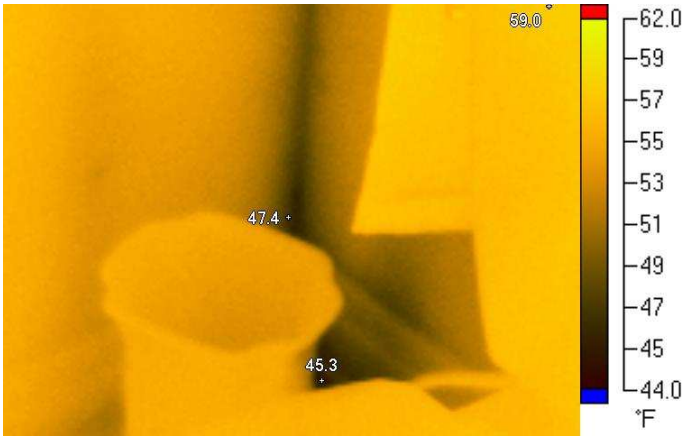
**Side entrance door weather stripping gap.**



**IR000615.IS2**  
1/27/2009 2:56:14 PM



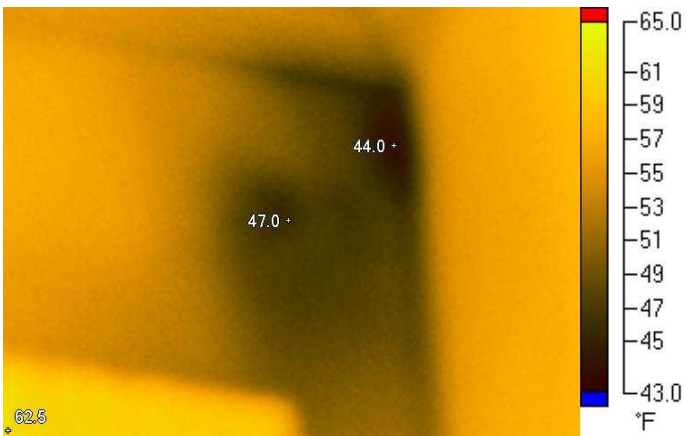
**Side entrance door weather stripping gap.**



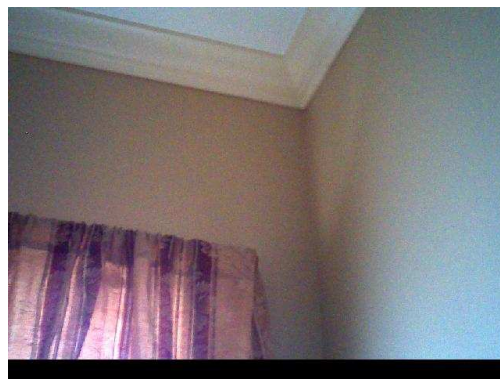
**IR000616.IS2**  
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**Bath in side entrance hall way. Left of toilet at baseboard.**



**IR000617.IS2**  
1/27/2009 3:02:44 PM



**Bath in side entrance way upper right wall on exterior wall. Coincides with dormer/porch cover on exterior.**