



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, 1st floor guest bathroom and bedroom, 1st 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 1st 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.

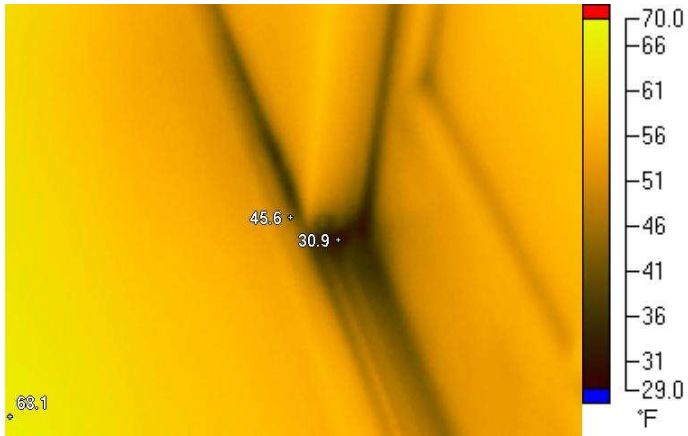
The pictures and images below are for reference. The Infrared images have three temperature values on the image. 1 is the highest temperature in the view, 1 is the lowest temperature in the view and 1 is the center point temperature.



Dormer/porch cover on side of house



Areas of concern at dormer/porch cover soffit vents

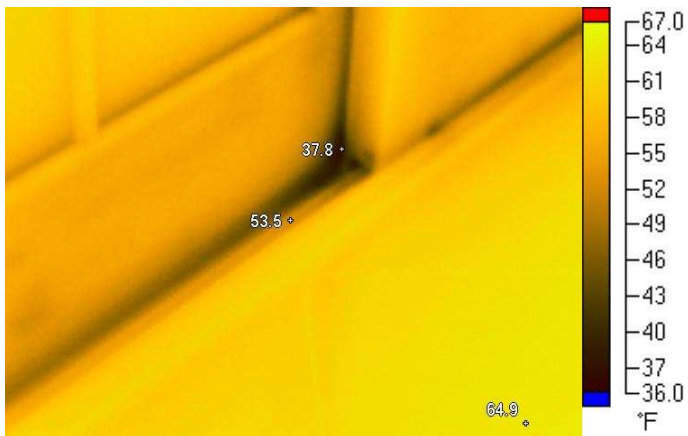


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Sliding door on left side of eating area.

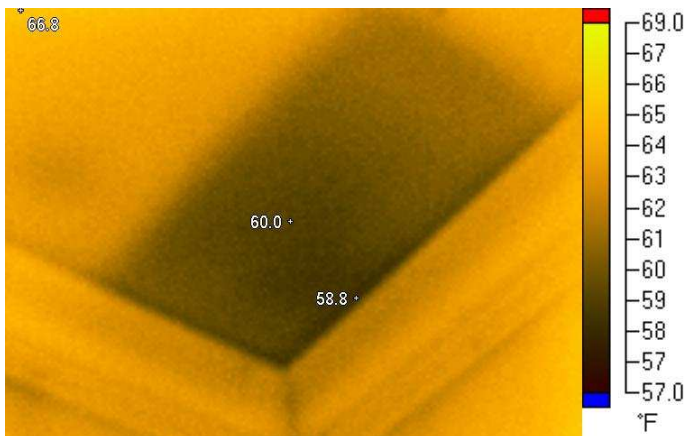


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Sliding door on right side of eating area to porch.



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Soffit in front right corner of main dining room.



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Ceiling in entry way. Insulation may be disturbed or not completely in place.



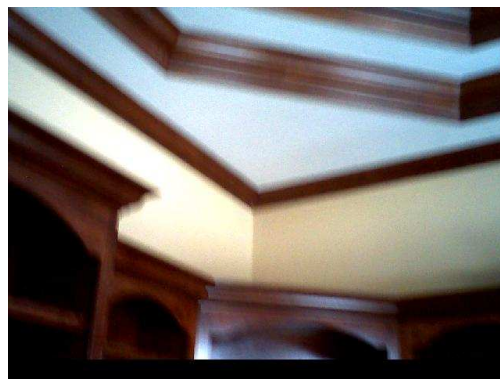
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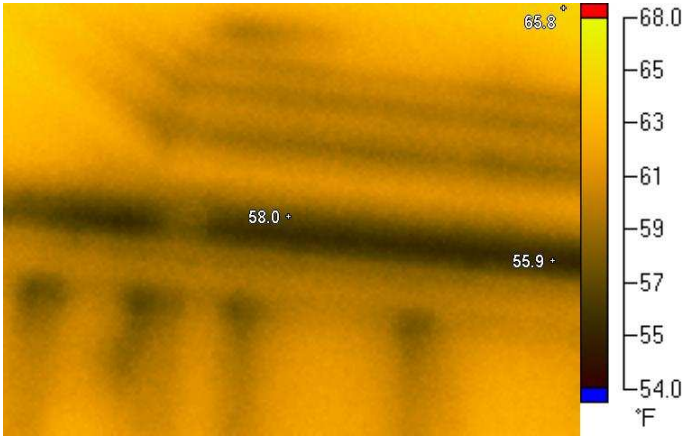
Side wall in entry way. 59.8 degrees in the dark area.



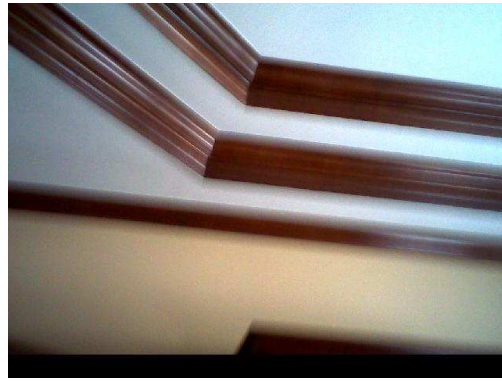
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Office over cabinets



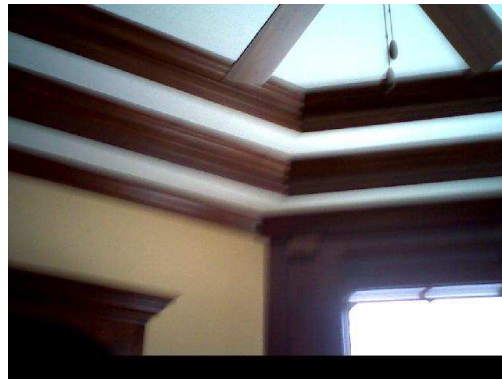
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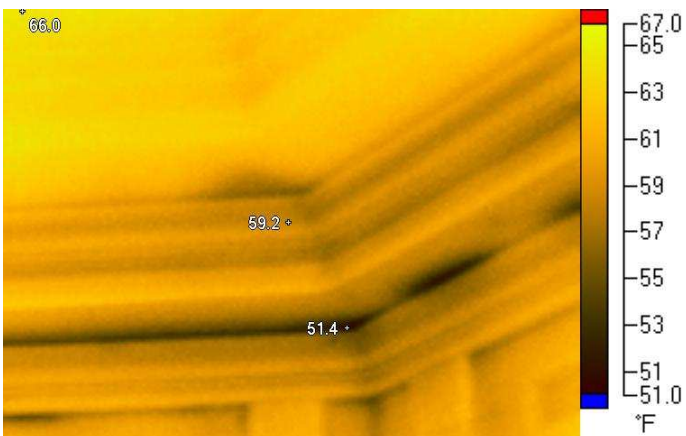
Lower tier of soffit on left outside wall from office entry view.



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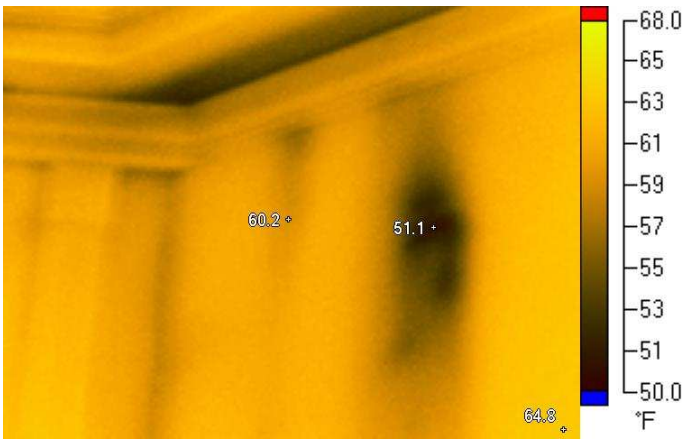
Soffit area main office left of window toward the front.



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Soffit area main office over windows. Lower tier.

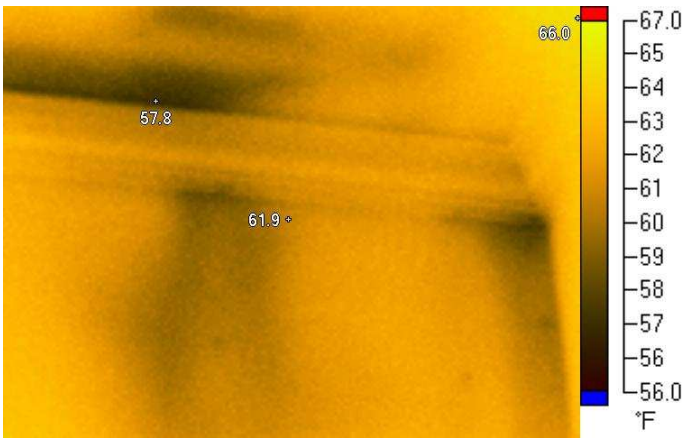


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Main office right wall from entry door view.

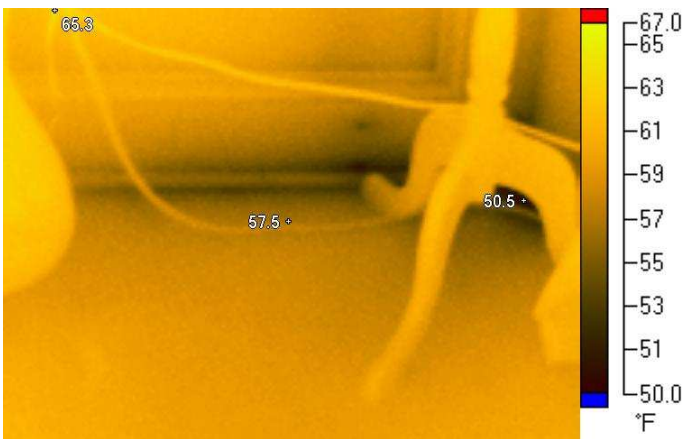


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Main office looking back at entry door. Wall to the right over cabinets. Evidence of possible air infiltration or disturbed insulation.

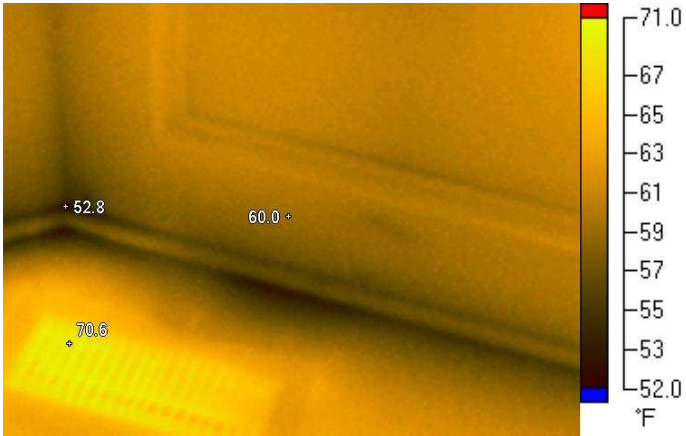


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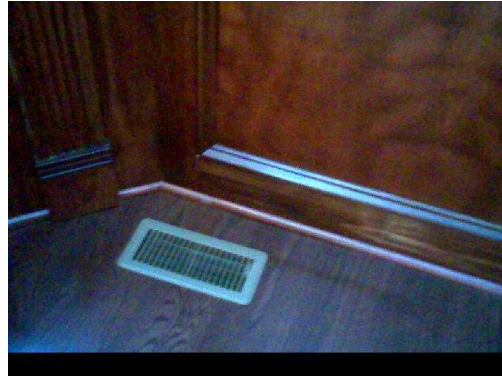


Main corner front left corner at the baseboard.

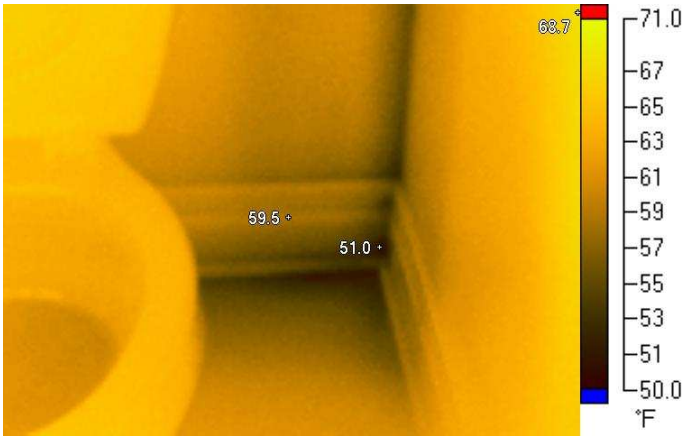


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Main office front right corner at the baseboard.

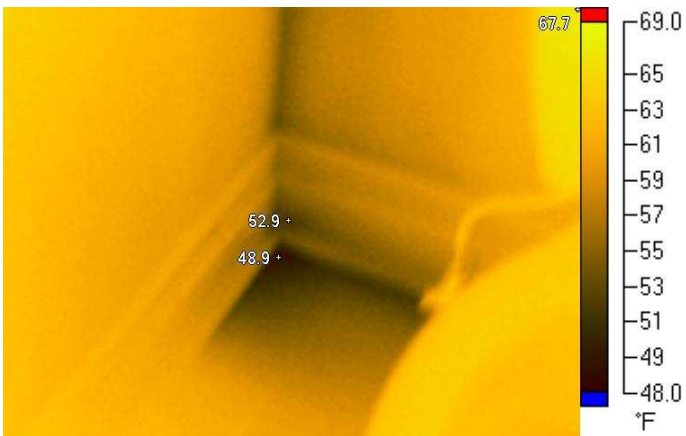


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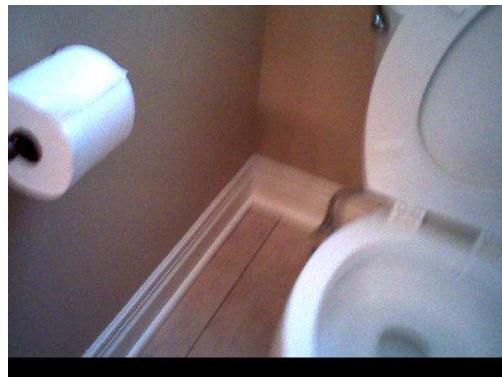


Guest bathroom first floor right of toilet.



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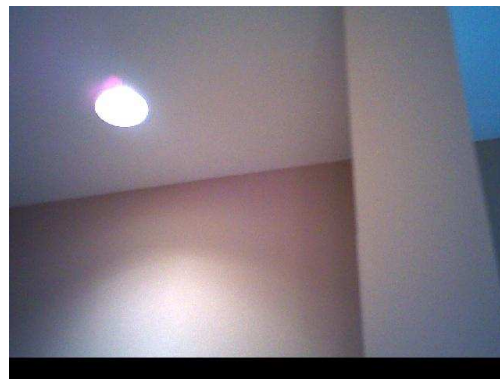
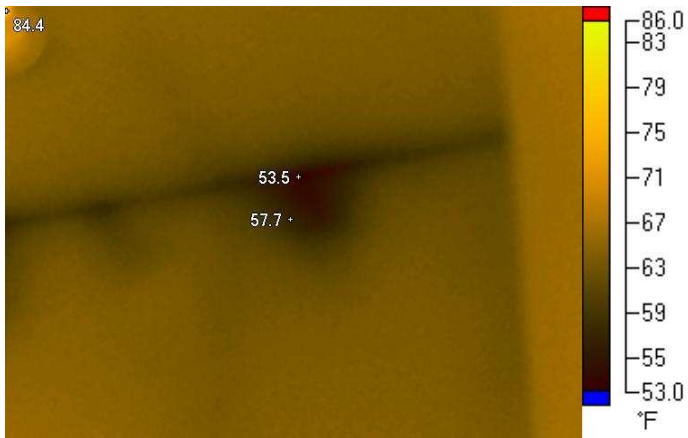


Guest bathroom first floor left of toilet.



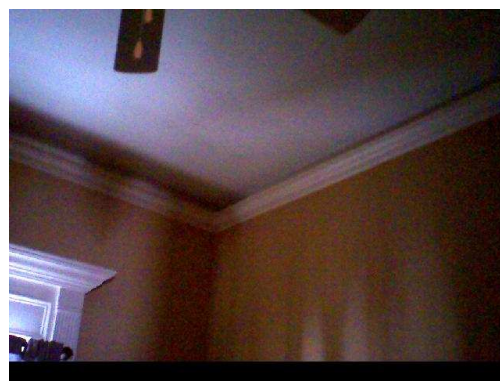
Guest bathroom over shower.

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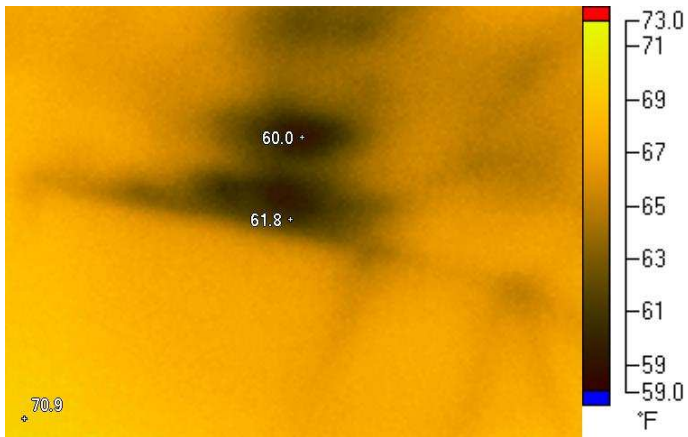
Guest bathroom over shower.

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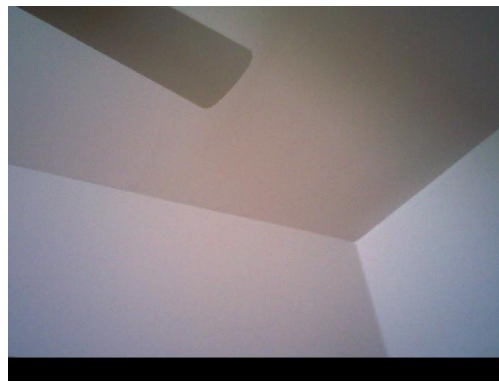
Guest bedroom rear ceiling at corner.

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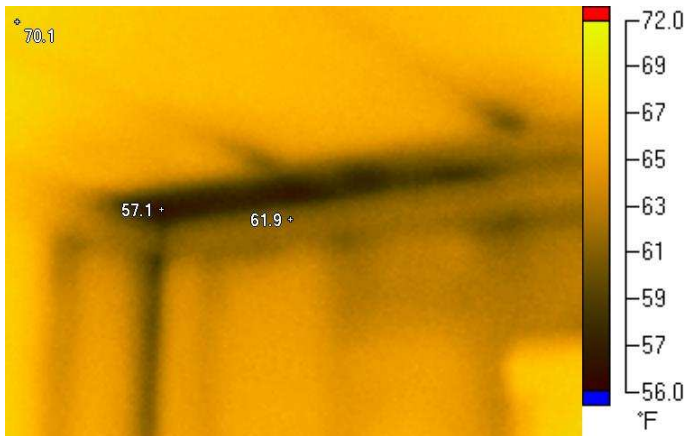


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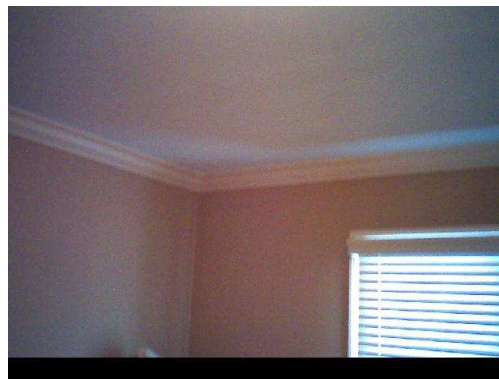


Master bedroom ceiling right side of bed.

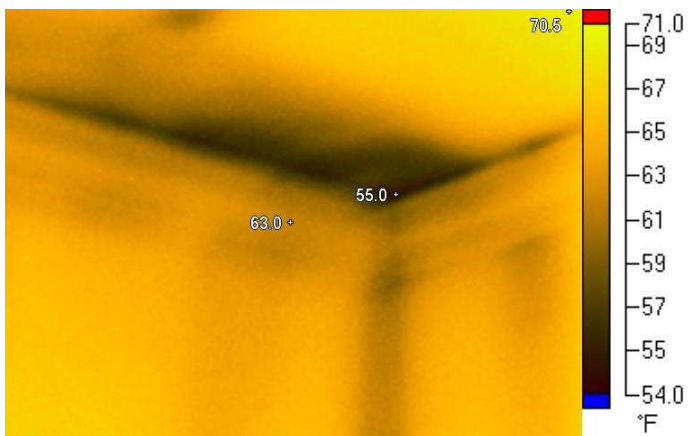


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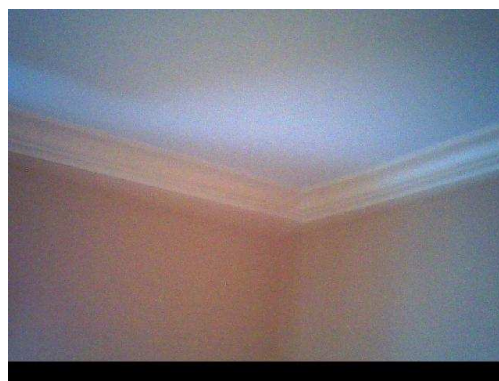


Middle son room left ceiling above the window.

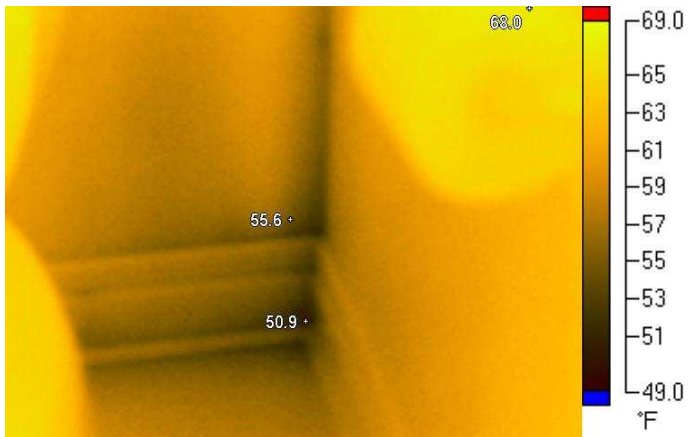


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Middle son room right ceiling above the window.

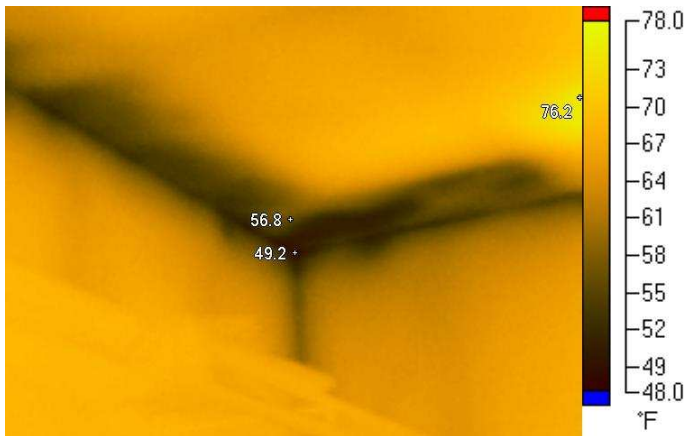


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Middle son bathroom right side of toilet. This is over the garage.



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Middle son closet left rear corner.

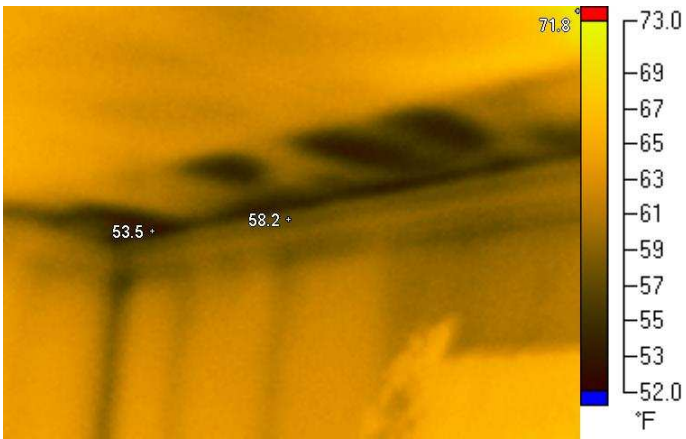


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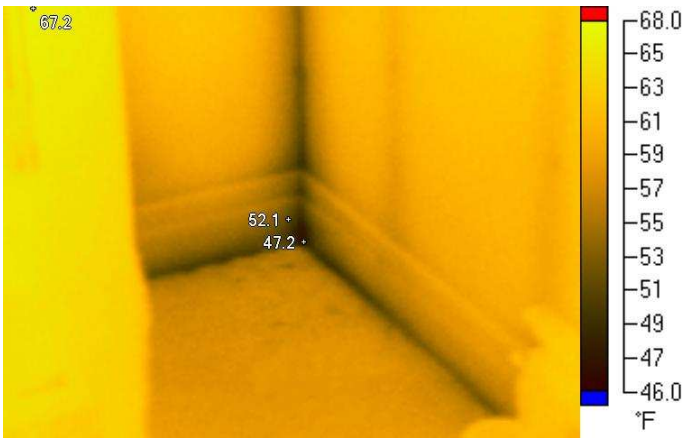
Oldest son's bedroom right of bed at baseboard.



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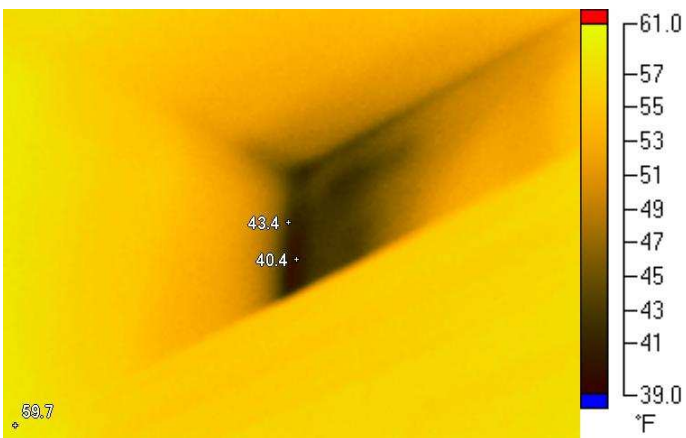
Daughters room left rear corner ceiling.



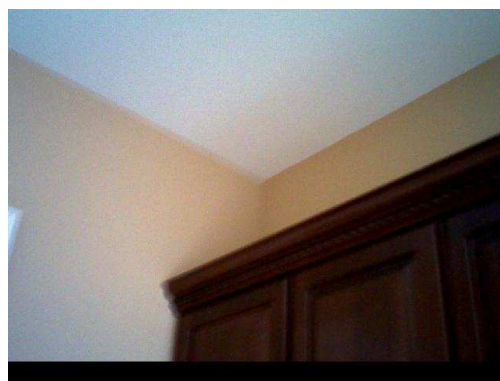
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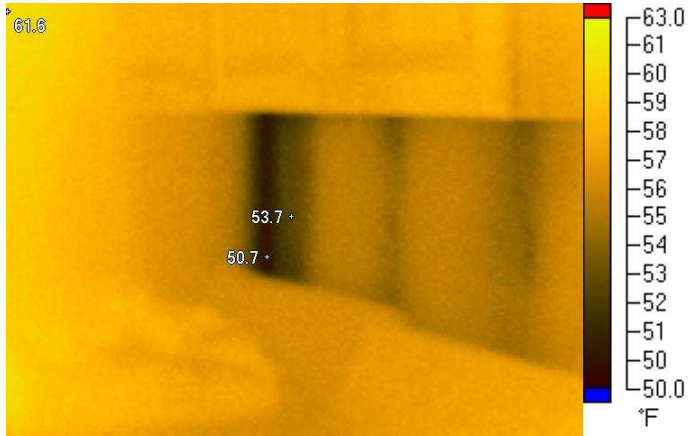
Daughters room left rear corner baseboard.



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



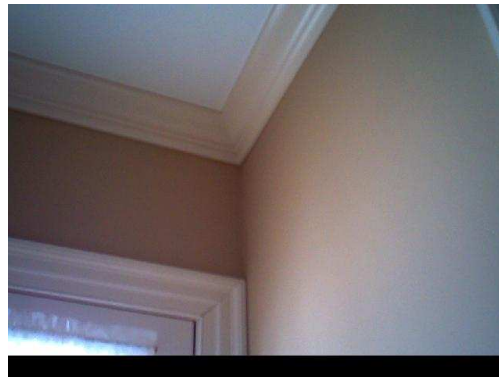
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Laundry room corner next to dryer.



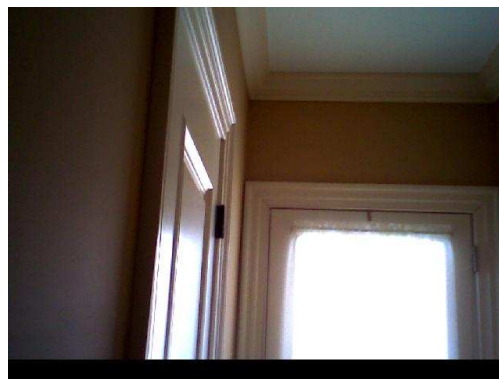
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Side entrance area at ceiling. Coincides with laundry room cool area.



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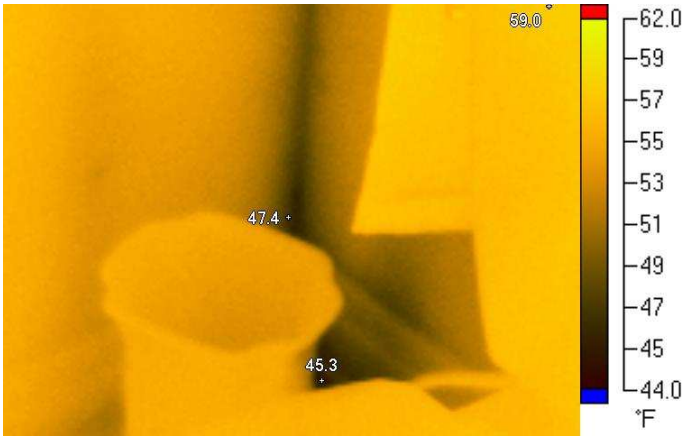
Side entrance door weather stripping gap.



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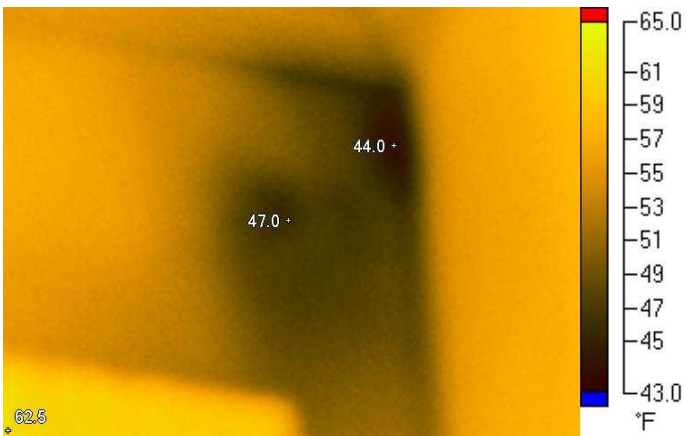
Side entrance door weather stripping gap.



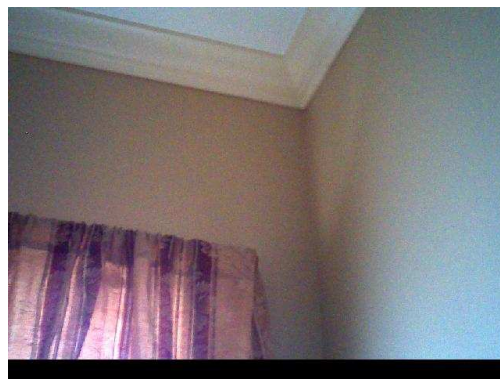
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Bath in side entrance hall way. Left of toilet at baseboard.



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