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Infrared Analysis for 13 Elm Street, Anywhere, Indiana

Problems with thermal comfort, and musty odor in closet

Prepared for:

Mr. Kruger
13 Elm Street
Anywhere, Indiana

Inspection Summary

Star Home Inspections was contacted and retained by the client to perform a thermal/infrared inspection at the address referenced above. The client experiences problems with thermal comfort (cold in winter, hot in summer) in some areas of the home. He has also detected moldy/musty odors in a 2nd story bedroom closet.

The outside temperature was 62-66 degrees on the day of the inspection, depending on the side of the home readings were taken. Wind was southwest and 5-7 mph.

The following images and statements may help explain the reasons why the client has been experiencing problems.

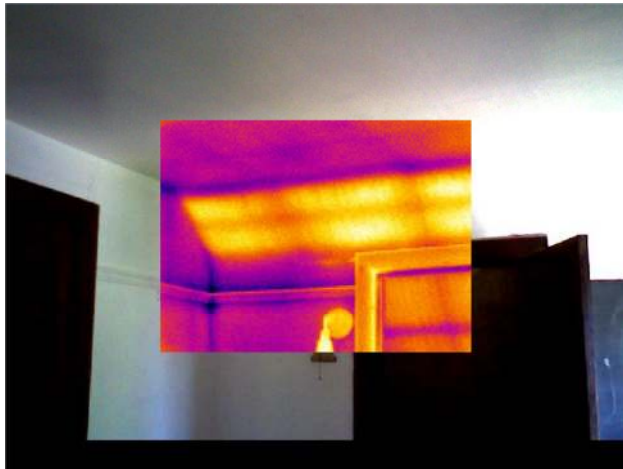


IR000293.IS2

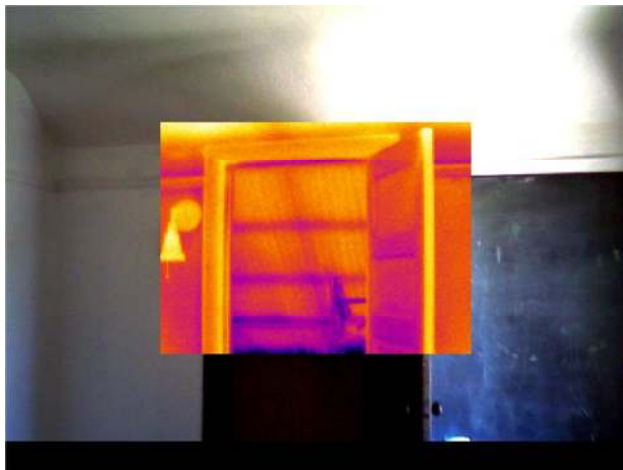
Angled portions of the ceiling in the 2nd story show insulation deficiencies. These areas in older homes can be problematic to insulate due to the width of existing rafter/roof structure. There is simply not enough space to insulate. However, since surrounding areas show comparatively little thermal transfer to the interior surfaces, it should be assumed that insulation improvements in these areas are possible and feasible. Additional photos are included below in other areas of the 2nd story; the same discussion applies to these areas as well.



IR000294.IS2



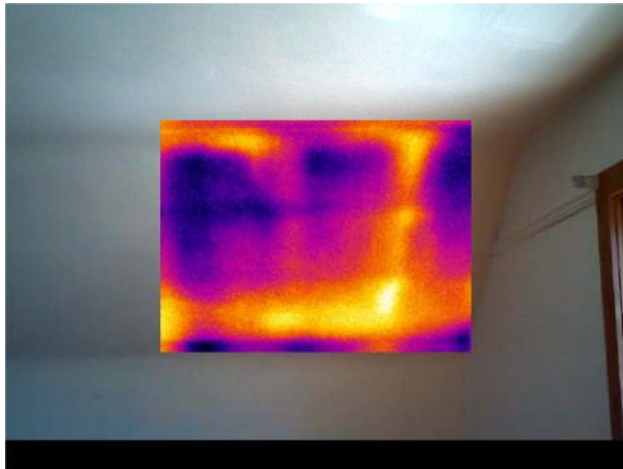
IR000295.IS2



IR000296.IS2



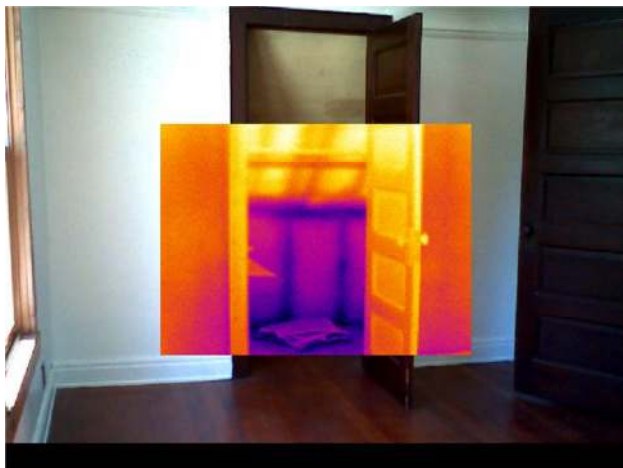
IR000297.IS2



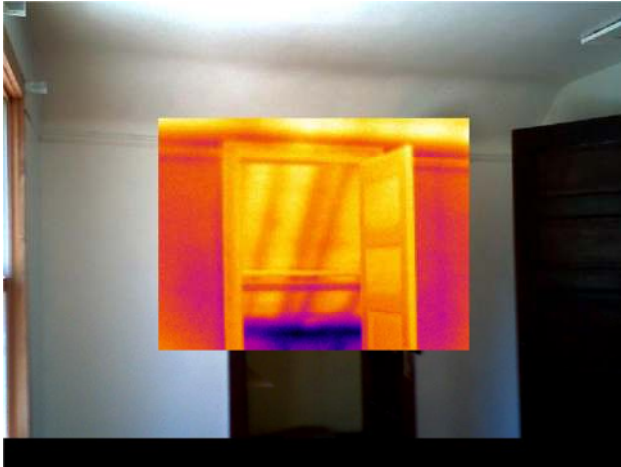
IR000298.IS2



IR000299.IS2



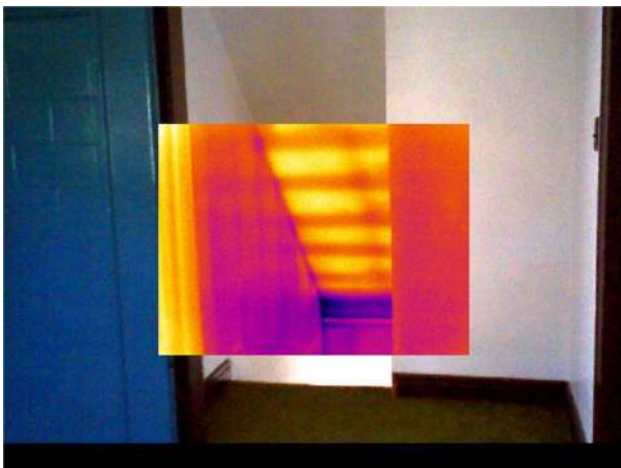
IR000300.IS2



IR000301.IS2



IR000303.IS2



IR000304.IS2

The image below was taken in the southwest corner of the sitting room. This temperature anomaly was colder than the surrounding material, and was confirmed with radiometric moisture sensing equipment to be wet. Further inspection of the exterior found flashings to be defective above the bay area causing water leakage.



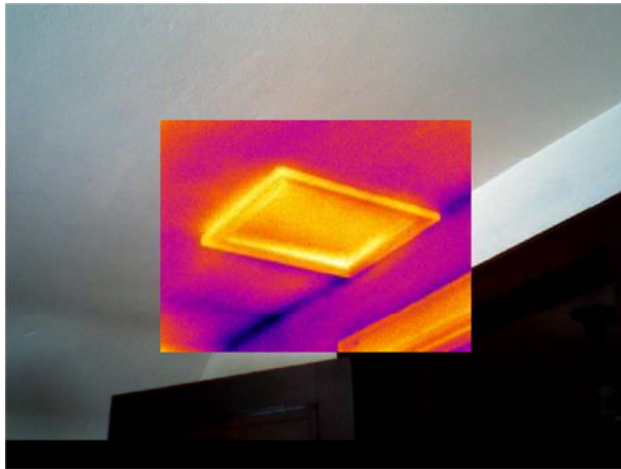
IR000305.IS2

The client has experienced moldy/musty odors in the bedroom closet. A temperature anomaly was found in the back of the closet. This temperature anomaly was colder than the surrounding material, and was confirmed with radiometric moisture sensing equipment to be wet. Further investigation revealed an old brick chimney on the back side of this wall. The chimney flashings were found to be defective, and the chimney was without a rain cap.



IR000307.IS2

The image below shows an attic scuttle (access) in the 2nd story. A thermal scan shows this access to be inadequately insulated and unsealed. Stack effect as well as thermal transfer can occur in this area.



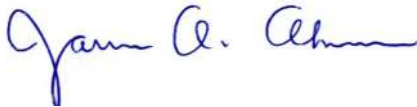
Summary

Insulation deficiencies were identified in many areas of angled walls in the 2nd story. These areas are problematic to insulate in older homes due to the width of native rafter used during construction. Sometimes, the most feasible solution is to install extruded polystyrene on the interior surfaces and to drywall over the top. This takes a small amount of space from the interior area. An alternative is to remove the shingles and to install insulation designed for roof applications, over the roof sheathing before installing a new layer of shingles. Unfortunately, rafter width places limitations on the amount of insulation that can be installed in ceilings.

The bay area should be re-flashed and reroofed to prevent further moisture penetration.

The chimney should be re-flashed and a rain cap should be installed on the chimney to prevent leakage.

We have enjoyed working with you on this project and look forward to working with you in the future. At Star Home Inspections Inc., we place great emphasis on the value of open communication -- **both in written and verbal form**. Therefore, please feel free to contact me anytime if you have any questions, and I will be glad to meet with you and discuss the report, and explain anything you find unclear.



Sincerely,

James O. Akers **RREI, CREI**

Commercial/Residential Real Estate Inspector and Infrared Specialist

Indiana Home Inspector License #HI00500158