



## Infrared Energy Report



Rouser Way  
Hillsborough, NJ 08844

***Prepared by:***



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March 11, 2012

Rouser Way  
Hillsborough, NJ 08844

Dear Mrs. Jones:

Please find below, the report from the infrared (IR) survey of heat loss that was conducted for you recently.

This report is designed to be clear, easy to understand and helpful. If there is anything you would like for us to explain, or if there is other information you would like, please feel free to call me at 732-356-1078.

We thank you for the opportunity to be of service to you.

Sincerely,

Richard Roshak

Certified Infrared Thermographer #8353

## Survey Information

Survey Report #: 20120311SAM  
Survey date: 3/11/2012  
  
Weather: Partly Cloudy  
Outdoor temperature: 52  
Indoor temperature: 74  
Temp diff In-Out ( $\Delta t$ ): 22

## Understanding Infrared Imagery and Thermography

### **General**

This inspection report reflects the conditions of the property at the time of the survey only. Hidden or concealed defects cannot be included in this report, therefore no warranty is either expressed or implied, however an earnest effort was made to discover defects.

Infrared imagery is often a grayscale picture whose scales (or shades of gray) represent the differences in temperature and emissivity of objects in the image. As a general rule, objects in the image that are lighter in color are warmer and darker objects are cooler. No object in the IR images attached is detected via visible light wavelengths (400-700 nanometers) rather, only from infrared wavelengths of 3000-14000 nanometers. Lights and other relatively hot objects are very evident, but as a result of their heat, not light emissions.

When an image is taken by our infrared camera, it is recorded on the internal memory of the camera and later converted to a digital image file with the help of a computer. The image may be then modified in a number of ways to enhance its value to the end user. In the case of this report, the images were digitized and then adjusted for contrast and brightness before being scaled and placed into our custom program and later converted to this PDF file.

### **Analysis**

We were contracted to find areas that waste energy. Our survey of building within the time frame was focused on the heat loss by finding missing, misplaced or damaged insulation in the exterior walls and ceilings and by finding air leakage to the level which we were able to create by reducing the internal pressure, without installing a blower door. Every attempt was made to image property according to the ASTM C1060 standard, however, due to circumstances beyond our control this might not have been possible. For example, weather conditions, inaccessible areas, furniture or appliances that cover a given area.

## **Recommendations**

We recommend all areas showing anomalies should be evaluated to find out the cause and repaired. Our recommendations are not intended as criticisms of the building, but rather as professional opinions regarding conditions that we found.

We are often asked how to prioritize the repairs and repair the areas that have been identified in this report. Below, find the three categories:

- Conditions which affect performance and life safety issues (if any) are of course, of the highest priority.
- Next are conditions that do not appear to pose any threat to the safety of the occupants of the building, but that need repair because they create a condition that affects the performance of the building or could deteriorate the building itself. Examples would be items that appear to be large areas of heat loss or areas of moisture intrusion. These areas should be tested by a qualified repairman to determine the appropriate corrective action.
- Finally, lower priority conditions that have a low impact on performance of the thermal, air and/or moisture barriers, but have reached the level of a reportable anomaly. These should be evaluated to determine if it is cost-effective to conduct repairs.

## **Orientation**

We will describe the locations of the various features of this property, left or right, etc., as though we were standing in street looking at the front of building.

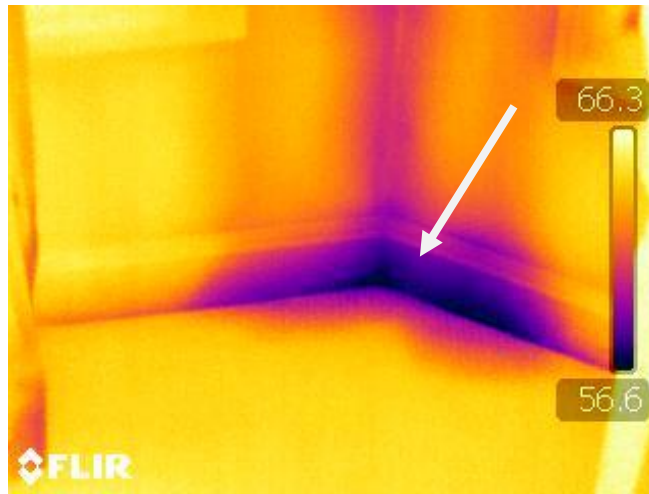
### **Information Contained On the Thermographic Report Pages**

Through the use of thermal imaging, we have found areas with anomalies. These anomalies have been notated on the individual thermographic reports that follow (typically, two per page). Infrared thermographs and visual photographs were taken during survey. If we did not find a reportable anomaly, we did not create a thermographic report.

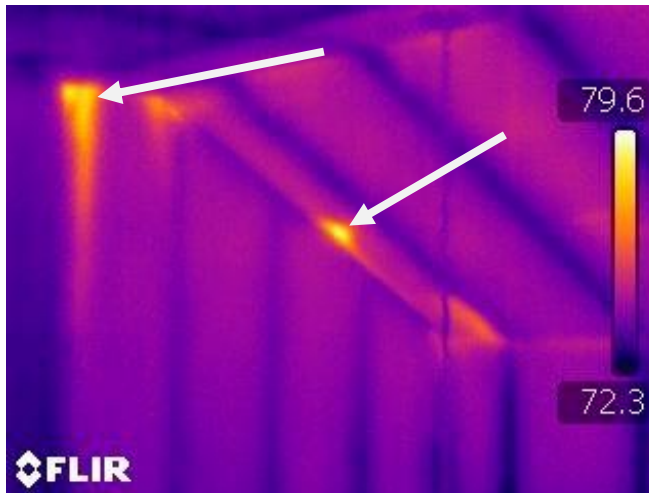
## **Interpretation**

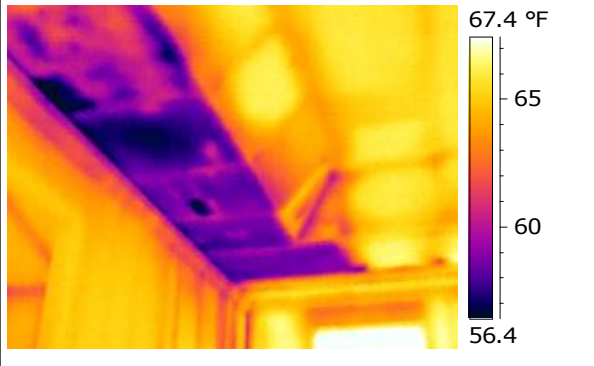

When viewing IR images, anomalies commonly present where the conditions exist and/or where our reference (arrows or area boxes) are located. When IR images are taken during colder months (winter), the areas of deficient insulation look darker. When IR images are taken during warmer months (summer), the areas of deficient insulation look lighter.



“WINTER” COLD SPOTS

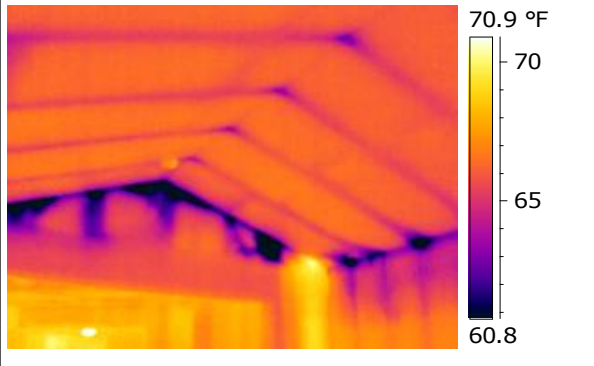



“SUMMER” HOT SPOTS

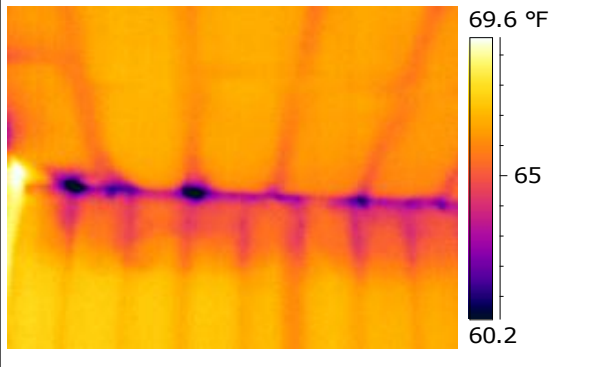



	
<p><b>Image.File name</b> IR_1030.jpg</p>	<p><b>Image.Date</b> 3/10/2012 <b>Image.Time</b> 10:25:33 AM</p>
<p>LOCATION: Master Bedroom          WHERE: Ceiling          CONDITION: The thermal pattern, Darker areas, is indicative of insufficient/missing insulation          RECOMMENDATION: Suggest adding additional insulation          COMMENTS:</p>	

	
<p><b>Image.File name</b> IR_1032.jpg</p>	<p><b>Image.Date</b> 3/10/2012 <b>Image.Time</b> 10:26:42 AM</p>
<p>LOCATION: Master Bedroom          WHERE: Ceiling          CONDITION: The thermal pattern, Darker areas, is indicative of insufficient/missing insulation          RECOMMENDATION: Suggest adding additional insulation          COMMENTS:</p>	

	
<p><b>Image.File name IR_1034.jpg</b></p>	<p><b>Image.Date 3/10/2012 Image.Time 10:28:45 AM</b></p>

LOCATION: Master Bedroom  
 WHERE: Wall and ceiling junction  
 CONDITION: The thermal pattern, darker areas, is indicative of missing insulation/air leakage  
 RECOMMENDATION: Installing additional insulation and air sealing is recommended  
 COMMENTS:

	
<p><b>Image.File name IR_1038.jpg</b></p>	<p><b>Image.Date 3/10/2012 Image.Time 10:29:49 AM</b></p>

LOCATION: Master Bedroom  
 WHERE: Wall and ceiling junction  
 CONDITION: The thermal pattern, darker areas, is indicative of missing insulation/air leakage  
 RECOMMENDATION: Installing additional insulation and air sealing is recommended  
 COMMENTS:

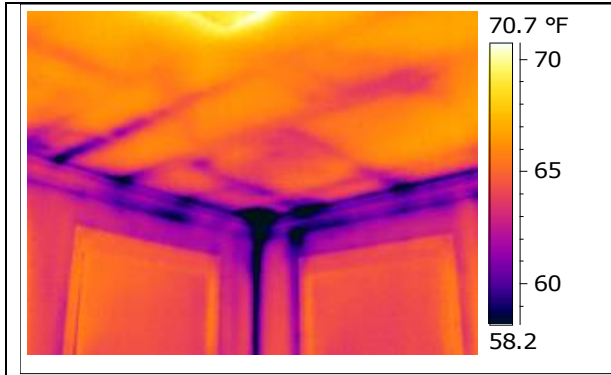


Image.File name IR\_1040.jpg



Image.Date 3/10/2012 Image.Time 10:30:33 AM

LOCATION: Master bathroom  
 WHERE: Wall and ceiling junction  
 CONDITION: The thermal pattern, darker areas, is indicative of missing insulation/air leakage  
 RECOMMENDATION: Installing additional insulation and air sealing is recommended  
 COMMENTS:

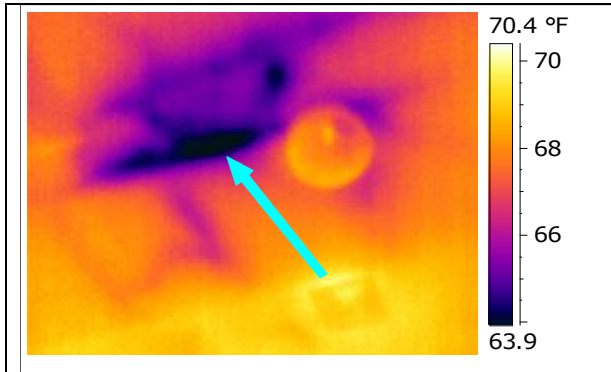


Image.File name IR\_1042.jpg



Image.Date 3/10/2012 Image.Time 10:31:24 AM

LOCATION: Master bathroom  
 WHERE: Ceiling  
 CONDITION: The thermal pattern, Darker areas, is indicative of insufficient/missing insulation  
 RECOMMENDATION: Suggest installing additional blown-in insulation to R-50  
 COMMENTS:



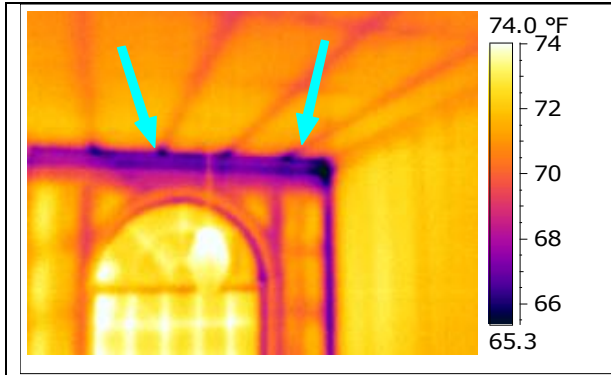


Image.File name IR\_1044.jpg



Image.Date 3/10/2012 Image.Time 10:32:24 AM

LOCATION: Entry  
 WHERE: Wall and ceiling junction  
 CONDITION: The thermal pattern, darker areas, is indicative of missing insulation/air leakage  
 RECOMMENDATION: Installing additional insulation and air sealing is recommended  
 COMMENTS:

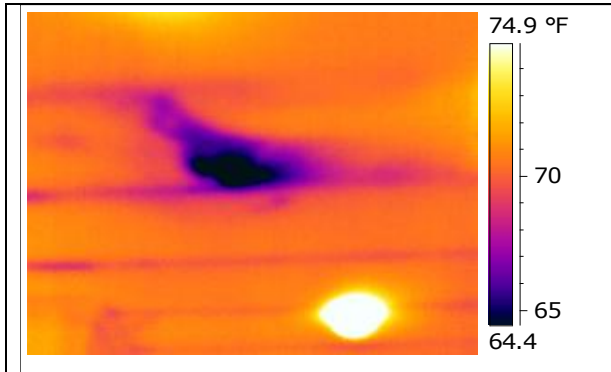


Image.File name IR\_1046.jpg

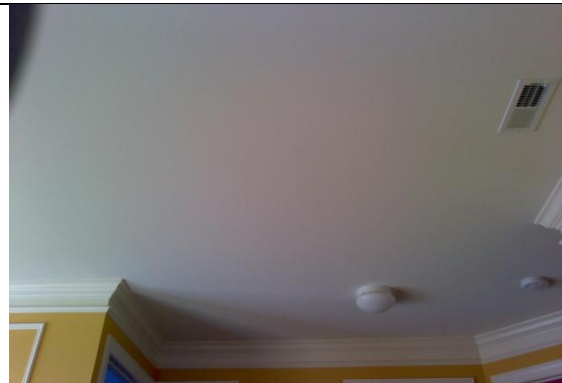
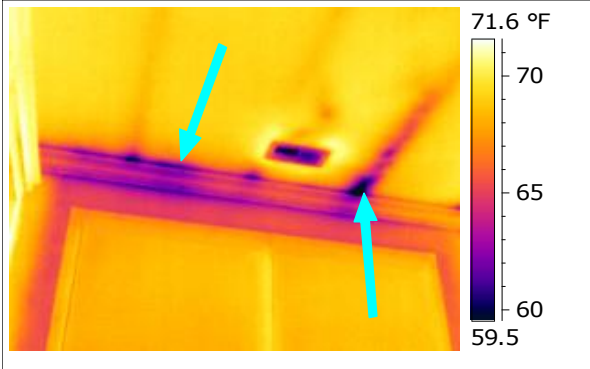


Image.Date 3/10/2012 Image.Time 10:33:18 AM

LOCATION: Hallway Upper  
 WHERE: Ceiling  
 CONDITION: The thermal pattern, darker areas, is indicative of missing insulation  
 RECOMMENDATION: Suggest installing additional blown-in insulation to R-50  
 COMMENTS:



**Image.File name IR\_1048.jpg**



**Image.Date 3/10/2012 Image.Time 10:34:30 AM**

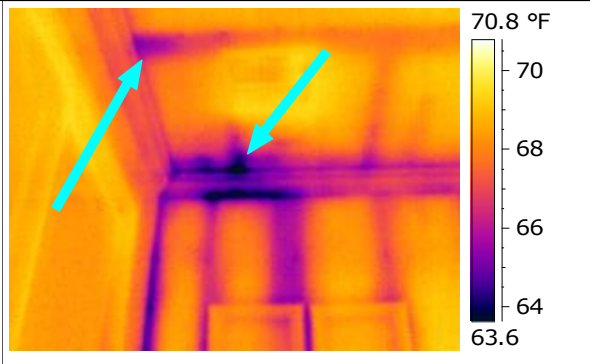
LOCATION: Rear Center Bedroom

WHERE: Wall and ceiling junction

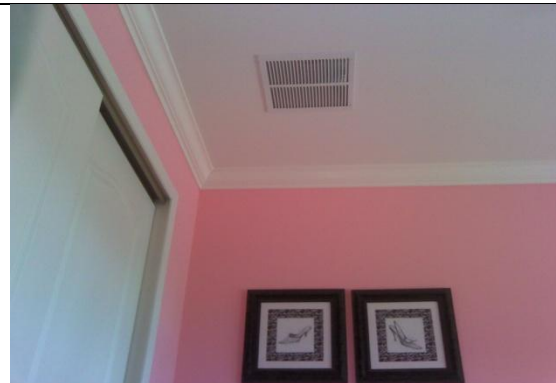
CONDITION: The thermal pattern, darker areas, is indicative of missing insulation/air leakage

RECOMMENDATION: Installing additional insulation and air sealing is recommended

COMMENTS:



**Image.File name IR\_1050.jpg**



**Image.Date 3/10/2012 Image.Time 10:35:24 AM**

LOCATION: Rear Left Bedroom

WHERE: Ceiling

CONDITION: The thermal pattern, darker areas, is indicative of missing insulation/air leakage

RECOMMENDATION: Installing additional insulation and air sealing is recommended

COMMENTS:



Image.File name IR\_1052.jpg



Image.Date 3/10/2012 Image.Time 10:36:31 AM

LOCATION: Rear Left Bedroom  
 WHERE: Wall and ceiling junction  
 CONDITION: The thermal pattern, darker areas, is indicative of missing insulation/air leakage  
 RECOMMENDATION: Installing additional insulation and air sealing is recommended  
 COMMENTS:

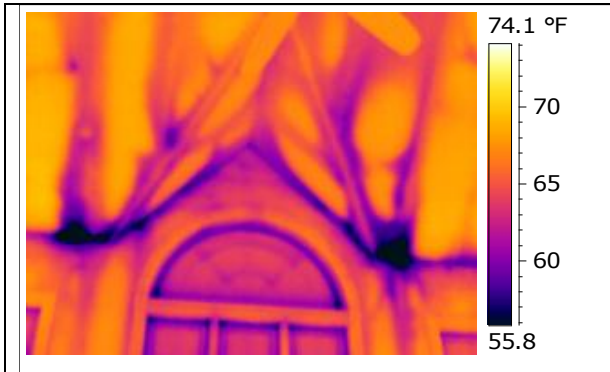
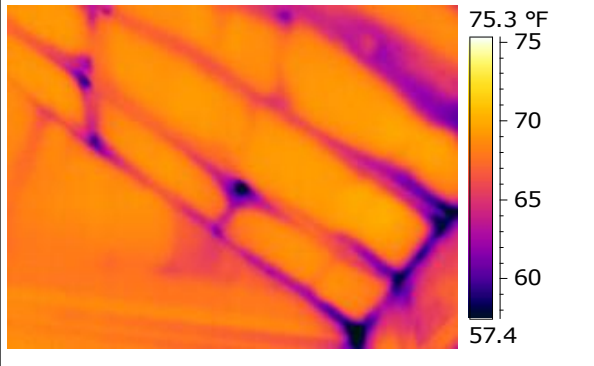



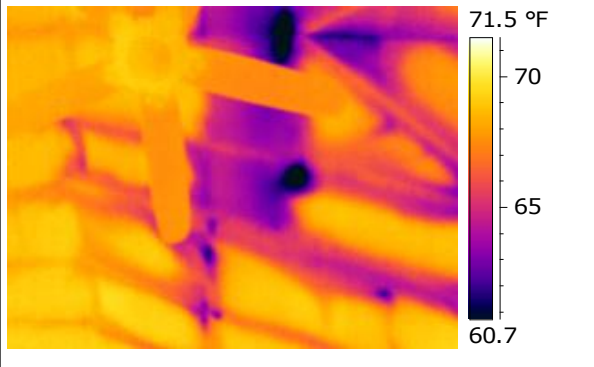

Image.File name IR\_1054.jpg

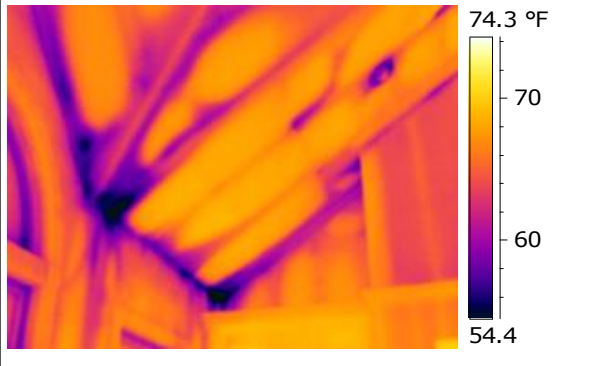



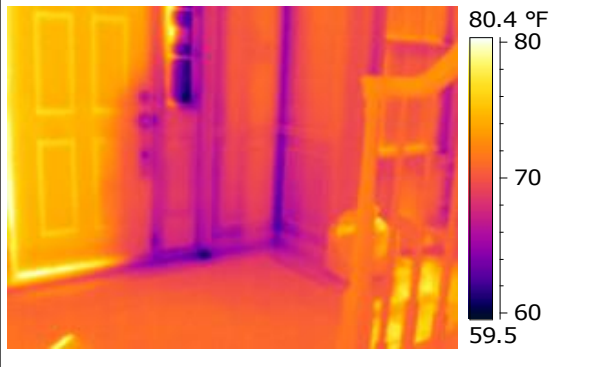

Image.Date 3/10/2012 Image.Time 10:37:48 AM

LOCATION: Family Room  
 WHERE: Ceiling  
 CONDITION: The thermal pattern, darker areas, is indicative of missing insulation/air leakage  
 RECOMMENDATION: Installing additional insulation and air sealing is recommended  
 COMMENTS:

	
<b>Image.File name IR_1056.jpg</b>	<b>Image.Date 3/10/2012 Image.Time 10:38:36 AM</b>
<p>LOCATION: Family Room          WHERE: Ceiling          CONDITION: The thermal pattern, Darker areas, is indicative of insufficient/missing insulation          RECOMMENDATION: Suggest installing additional blown-in insulation to R-50          COMMENTS:</p>	

	
<b>Image.File name IR_1058.jpg</b>	<b>Image.Date 3/10/2012 Image.Time 10:39:15 AM</b>
<p>LOCATION: Family Room          WHERE: Ceiling          CONDITION: The thermal pattern, Darker areas, is indicative of insufficient/missing insulation          RECOMMENDATION: Suggest installing additional blown-in insulation to R-50          COMMENTS:</p>	

	
<p><b>Image.File name</b> IR_1060.jpg</p>	<p><b>Image.Date</b> 3/10/2012 <b>Image.Time</b> 10:39:52 AM</p>
<p>LOCATION: Family Room                  WHERE: Ceiling                  CONDITION: The thermal pattern, darker areas, is indicative of missing insulation/air leakage                  RECOMMENDATION: Installing additional insulation and air sealing is recommended                  COMMENTS:</p>	

	
<p><b>Image.File name</b> IR_1062.jpg</p>	<p><b>Image.Date</b> 3/10/2012 <b>Image.Time</b> 10:41:15 AM</p>
<p>LOCATION: Entry                  WHERE: Door                  CONDITION: Air leakage                  RECOMMENDATION: Air sealing and upgrading door weatherstripping is recommended                  COMMENTS:</p>	