
PROFESSIONAL BUILDING INSPECTORS

1057 MORA PLACE, WOODMERE, NY 11598 • 6 JULIA CIRCLE, EAST SETAUKET, NY 11733



PHONE: 516-295-2581 • FAX: 516-791-6832 • WEB: PROFESSIONALBUILDINGINSPECTOR.COM

September 1, 2009

Your name here
123 Any Street
Any town, NY 12345

SUMMARY OF OUR FINDINGS

Professional Building Inspectors performed a thermal imaging inspection at the above property using a FLIR B20HS infra red thermal imaging camera. The objective of the survey was to detect any abnormal areas of moisture within the second floor master bathroom related to the radiant floor heating below the tile.

The attached thermal images of the master bathroom radiant floor heating and first floor living room ceiling (located below the master bathroom) **do not show any thermal anomalies consistent with failure or leak of the radiant floor heating. In our professional opinion, there are no indications of a leak if the radiant floor heating loop in the master bathroom based on the thermal imaging performed.** This determination is based on the data we collected onsite and within the limits of the technology available while performing a non-destructive evaluation. In addition to the thermal imaging, the loop of radiant floor heating in the bathroom passed multiple pressure tests up to 150 PSI without evidence of a leak.

Please read through the remainder of the report for details regarding the testing and associated thermal images.

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INFRARED INSPECTION REPORT

For the Inspection of:

[REDACTED]
Southampton, NY



Reported Age of Building: new construction/major renovation
Date of Inspection: August 14th 2009
Weather Conditions: clear skies,
External Temperature: 89 F
Time of Day: Start time 8:30 AM
Thermographer Mr. Scott Gressin

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Introduction

The thermal imaging camera used by PBI is a highly sensitive and calibrated device that enables our inspector to see the infrared spectrum. This wavelength of energy is indicative of the heat energy of a given object. In most applications it is not the temperature reading itself that is important but rather the pattern of temperature differentials. Using our knowledge and skill in building construction, electrical distribution systems and environmental consulting we interpret patterns in the images to determine if defects are present as well as the cause and origin.

The inspector for this report is Mr. Scott Gressin. He is a licensed New York State Home Inspector and a certified Thermographer by ITC. He holds certification as an E.I.F.S. Inspector, C.E.I., through the Association of the Wall and Ceiling Industry. Mr. Gressin also holds certifications, as a Certified Indoor Environmental Consultant (CIE-C) by the Indoor Air Quality Association.

Photographs may be taken by the Inspector during the course of the inspection. All Photographs taken are for the sole use of the inspector. At the discretion of the inspector who performed the inspection photographs may be provided to the client and their representative(s) for the sole purpose of clarification of conditions observed during the inspection. All photographs taken are solely and exclusively owned by Professional Building Inspectors and no other parties have any rights or claims to the photographs.

Please be advised that the scope of this inspection does not include verification of code compliance, nor a check of any public records including if all permits exist for the structure as inspected. We do not evaluate existing construction drawings, or evaluate C of O's issued by the local building department.

All directions given in this report are such that you would be exterior to the building when viewing the area in question, and if the area in question is interior to the building the view is still based on the exterior position.

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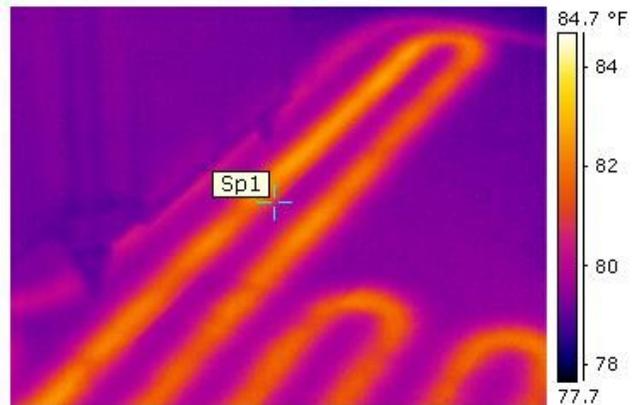


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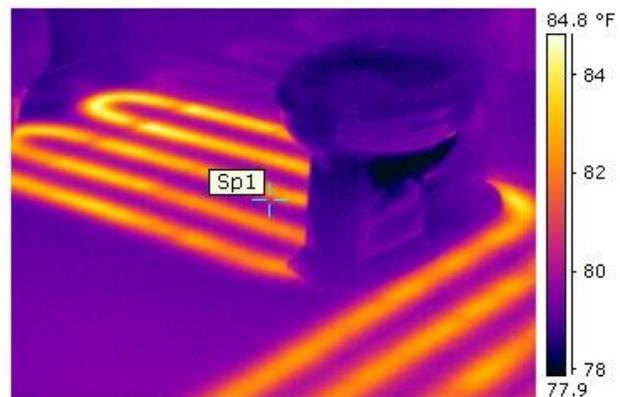
The images below are side-by-side digital photographs and thermal images. Essentially, the image on the left is what you see an image on the right is what the infrared camera sees.

Following baseline images with the infrared camera we taped off the windows in the master bathroom and hallway to prevent reflected images. The radiant floor heating was brought online at up to operating temperature. Using a thermal imaging camera we could visualize the entire radiant floor heating in the master bathroom.

The pattern of the tubing appeared neat and professional. There were no kinks or overlapping sections of tubing.



There was no evidence of leaking from the radiant floor heating under the toilet or bidet.



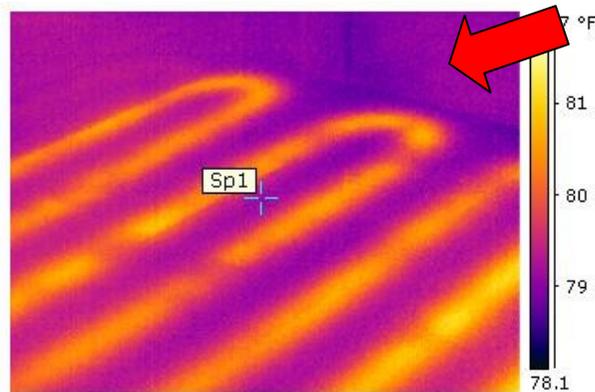
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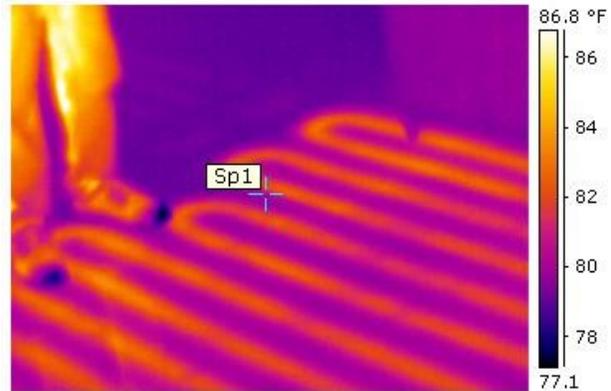


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There was no evidence of failure of the radiant floor heating either side of the entry doorway to the master bathroom. The image below shows the radiant floor heating just in front of the entry doorway to the master bathroom. The entry doorway as indicated by the red arrow.



This set of images below show the radiant floor heating to the right and underneath the sink vanity. Again, we find no evidence of leaking.



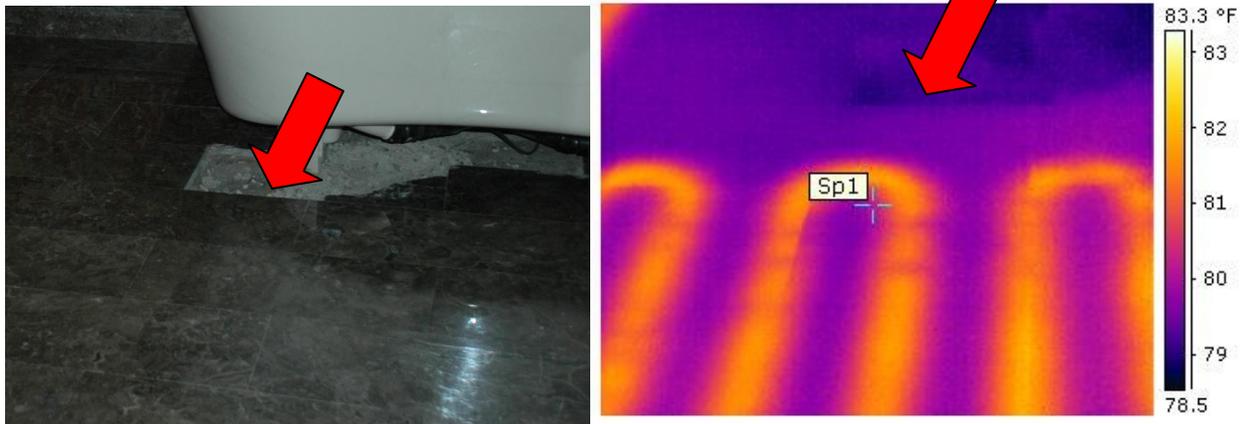
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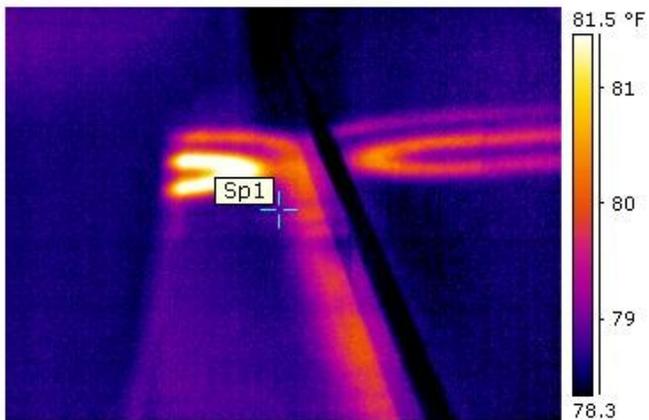


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The images below show the radiant floor heating near the bathtub. A section of tile had been removed from the floor. For reference this section of floor was indicated by the red arrow. There is no radiant floor heating underneath the bathtub. There is no indication that the loops over a floor heating or leaking near this section of floor where the tile was removed.



The thermal image below shows a return loop along the exterior wall behind the bathtub. There is no indication at this return loop is leaking.



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The images below were obtained in the living room below the master bathroom. We do not find any indication that water is pooling or collecting above the drywall ceiling. We can see that the choice they were the radiant tube's are located does as one would expect.



The images below show the radiant floor heating manifold in the basement. The installation is clean and professional. Our testing of the ratings were eating included operating system above normal temperatures and above normal operating pressures up to 150 psi. At no point during our test cycles was there an indication that the loop of radiant floor heating was leaking. The radiant floor heating system maintained constant pressure. There was no visible moisture in the master bathroom or living room ceiling. We capped the loop of radiant floor heating for one hour and the system maintained a constant pressure.

Following these multiple tests and thermal imaging of the master bathroom loop of the radiant floor heating yellow fluorescene dye was introduced into the loop of radiant floor heating.



The yellow dye was circulated through the radiant floor heating until the return line demonstrated

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complete fill. This can be seen by the yellow dye filling the bucket below. The system was brought back under pressure and sealed at 90 PSI.



the manifold for the radiant floor heating was then shut off. This was done to prevent unrestricted water flow into the house should the tubing fail.

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CONCLUSION

In our professional opinion, based on the testing we performed as illustrated above there is no evidence on thermal imaging at the radiant floor heating in the master bathroom is defective. This loop of radiant floor heating operated for over four hours during the test cycle without any failures. The system was able to maintain a constant pressure when capped, essentially passing an air leak test and there was no thermal imaging evidence of a leak.

At the conclusion of our test cycle rating floor heating was left off line and the loop with heating in the master bathroom was filled with a yellow dye. The system was left with 90 PSI.

We recommend you return to the home in several days to reject the pressure. If there is any yellow dye noted in the master bathroom floor or living room ceiling above it only would've come from the radiant floor heating loop. If there is moisture in those areas, but it is not yellow, It is not from the radiant floor heating.

Should you have any questions regarding our findings, please do not hesitate to me.

Sincerely,

Scott Gressin

Certified Indoor Environmental Consultant # 0705065

NYS Home Inspector License #16000028893

Certified EIFS Inspector #785806

Certified Infrared Thermographer #32227

NYS EPA Asbestos Inspector #07-07380

NYS EPA Lead Inspector #LII-7355

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Following notification and return of the report and verification of any defect, the client will be forwarded a check in the amount of 15% of the report fee as consideration for the above release provided that the client has already paid for the report. The 85% retained by Professional Building Inspectors represents fair compensation for the work involved in preparing the returned report, the time involved in the inspection itself, travel to and from the inspection site, knowledge gained by the client by virtue of reading the report or part thereof, the arrangements which had to be made, and general overhead. If the client has not already paid for the report then the fee for the inspection will be reduced by 20% as consideration for the above release. Acceptance of and payment for this report shall be deemed acceptance and understanding of the terms and conditions set forth within, and of the practical limitations of this type of visual inspection.