

Infrared Inspection Report



David A. Andersen & Associates

Building Science Thermographer #33784
TN HI Lic#40

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Inspection4U@charter.net

CLIENT: [REDACTED]
 ADDRESS: [REDACTED]
 EMAIL ADDRESS: [REDACTED]

HOME PHONE: WORK PHONE: CELL PHONE:

INSPECTION ADDRESS: [REDACTED]

DATE OF INSPECTION: 1 February 2008
 TIME: 9:30 a.m.
 SQUARE FOOTAGE: sf. (per listing)
 YEAR BUILT: 1998
 ORIENTATION TO FRONT: South.

INDOOR AIR CONDITIONS

Dry Bulb Temperature:68° F.
 Wet Bulb Temperature: ° F.
 Relative Humidity:21%

OUTDOOR WEATHER

Date	Time (cst)	Wind (mph)	Vis. (mi.)	Weather	Sky Cond.	Temperature (°F)				Pressure		Precipitation (in.)		
						Air	Dwpt	6 hour		altimeter (in.)	sea level (mb)	1 hr	3 hr	6 hr
01	13:52	W 9 G 17	10.00	Overcast	OVC023	30	23			30.14	1020.9			
01	12:52	W 16 G 22	10.00	Overcast	OVC025	30	22			30.13	1020.6			
01	11:52	W 9 G 23	10.00	Overcast	OVC023	30	22	33	28	30.13	1020.5			
01	10:52	W 18 G 28	10.00	Overcast	BKN023 OVC029	29	22			30.12	1020.4			
01	09:52	W 16 G 23	3.00	Overcast with Haze	FEW017 BKN029 OVC047	29	24			30.09	1019.3			
01	08:52	W 14 G 24	9.00	Overcast	OVC020	30	24			30.04	1017.6			
01	07:52	W 18 G 26	10.00	Overcast	OVC020	31	26			29.99	1015.8			
01	06:52	W 18 G 28	10.00	Overcast	BKN021 OVC034	33	27			29.94	1014.2			
01	05:52	SW 10 G 22	10.00	Overcast	OVC020	33	29	44	33	29.91	1013.1			0.04
01	04:52	W 17 G 28	10.00	Overcast	OVC020	35	30			29.86	1011.4	0.01		
01	03:52	SW 16 G 24	9.00	Light Rain	FEW015 BKN024 OVC036	37	34			29.81	1009.7	0.01		
01	02:52	SW 14 G 32	9.00	Light Rain	SCT017 BKN023 OVC034	39	35			29.78	1008.8		0.02	
01	01:52	SW 18 G 30	10.00	Overcast	SCT012 BKN020 OVC040	43	41			29.75	1007.5	0.01		
01	00:52	S 12	6.00	Light Rain Fog/Mist	SCT006 OVC012	42	40			29.73	1006.8	0.01		
31	23:52	S 8	5.00	Light Rain Fog/Mist	FEW005 SCT015 OVC029	41	39	41	35	29.74	1007.5	0.05		0.24

Introduction:

Thermal imaging is a technology that allows the Thermographer to show you things about your home/structure that are not possible to achieve using other inspection methods. Thermography is a "heat diagram" or a visible picture using the infrared spectrum of light. This imaging technique is a powerful and noninvasive means of monitoring and diagnosing the condition of buildings. IR inspections can provide immediate documentation of as-built and post-restoration conditions, post-casualty cause and origin data, plumbing and building envelope water leakage, post-flood and fire/water damaged material assessment that could lead to mold, energy inefficiency (missing, damaged, and/or wet insulation, heat loss and air infiltration in walls, ceilings, floors, windows and doors) and electrical problems (Electrical faults before they cause a fire, overloaded and undersized circuits, circuit breakers in need of immediate replacement). Thermal imaging helps to diagnose the problem rather than merely identify symptoms.

The test results are based on the readings obtained from the test equipment operated in accordance with the manufacturer's operating procedures. These results may not be definitive and have not been verified. The results are to be utilized as indicators of adverse conditions based upon differential measurements taken. These are non-intrusive inspection devices intended to extend our ability to detect conditions within this limited non-intrusive inspection. Our goal is to provide testing which verifies latent conditions which would otherwise be inaccessible without destructive and intrusive inspection procedures which is outside the scope of this inspection.

The content of this report describes the condition of the inspected property at the time and date of the inspection only. It is possible that the current conditions at the time of inspection will not be favorable to identify all thermal anomalies at all times. Without knowing specifically what we are looking for, timing of the inspection or control of the test conditions may not be favorable to detect all issues. This report should not be considered a warranty or insurance of any kind.

Thermal imaging services do NOT include any inspections, examinations, testing or evaluations for harmful, dangerous, or toxic substances or materials or environmental hazards including but not limited to: mold, bio-aerosols, radon, lead, asbestos, non-biological airborne particulates, contaminants, petroleum products, petrochemicals, radioactive materials, electromagnetic radiation, plant, animal, or insect secretions or excretions. Infrared cameras are not moisture meters but can aid in identifying areas that warrant further investigation. If INSPECTOR offers any information or opinions about any of the forgoing, this information shall be deemed to be informational only and supplied as a courtesy to the CLIENT.

Description:

Andersen and Associates was contracted by the client to inspect its property as a real estate pre-listing inspection to find significant deficiencies that should be repaired/disclosed in the listing of the real estate for sale.

The client identified water staining issues on the ceiling at three locations in the house. To the client's knowledge, the stained areas were not wet and were no longer leaking.

The following report is a summation of those findings.

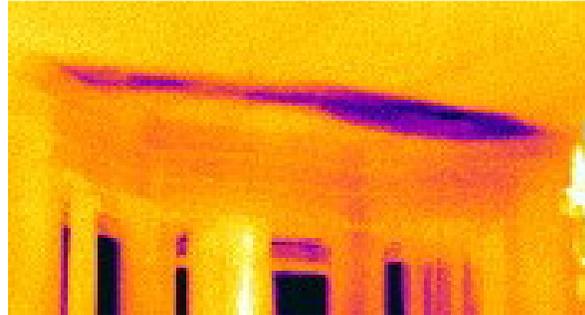
Findings:

Thermal imaging scans of the stained ceiling areas disclosed thermal anomalies depicting significant temperature difference. The pattern of these anomalies were indicative of moisture patterns in the sheet rock ceiling. Contact testing with electronic moisture sensing equipment was conducted and determined elevated moisture levels at all locations indicated by the thermal imaging as potentially wet areas.

Location: Right bay window in the dining room area on the first floor.

Comments:

Thermal patterns were noted. Electronic moisture testing indicated a 90% relative humidity reading in two small centralized areas of the large anomaly. The remainder of the area had substantially lower humidity readings. Location of nearby HVAC supply air registers are likely dehumidifying the moisture intrusion.

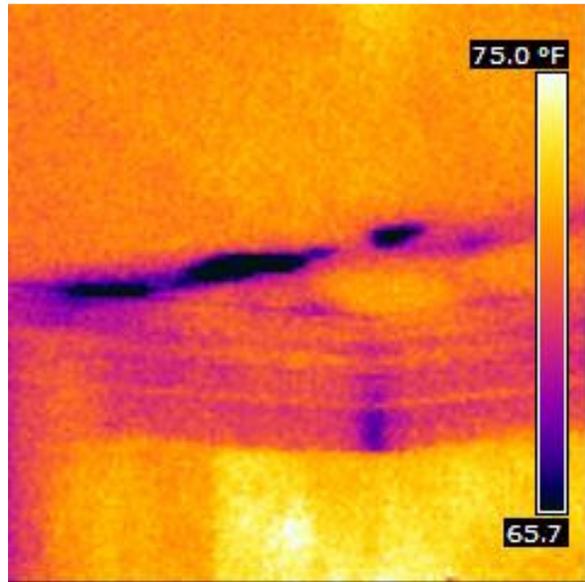


Location:

Left bay window in the living room area. First floor.

Comments:

Thermal patterns were noted. Electronic moisture testing indicated a moderate relative humidity reading in the centralized area of the thermal anomaly. The location in pattern is similar to the dining room a window location.

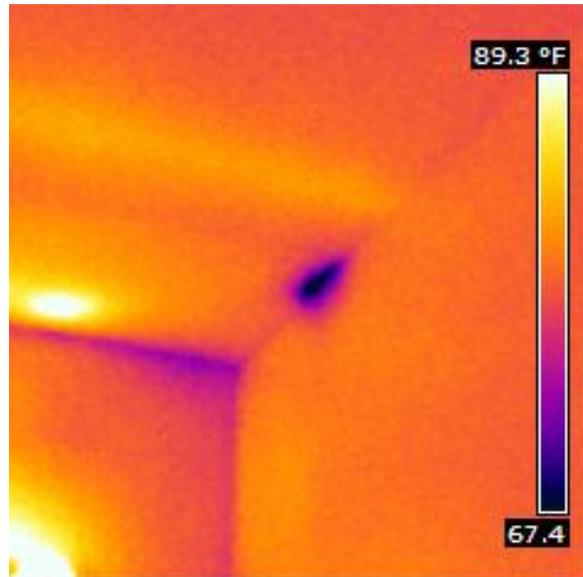


The source of moisture intrusion was located at the second-floor bedroom windows at inadequate caulking between the window in the brick veneer siding as well as a brick veneer crack radiating from the lower right-hand corner of the second-floor right window (facing the house).



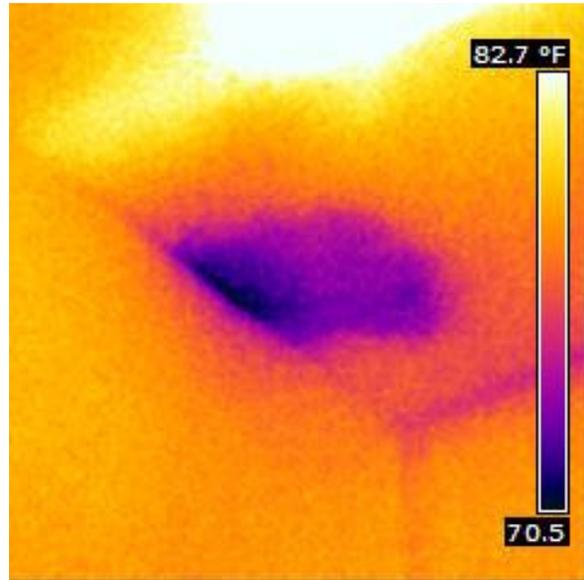
Location: Second-floor right rear bedroom and commonly shared bathroom.

Comments: A small water stain with apparent organic growth was visible at the ceiling in the right rear bedroom adjacent to the bathroom entry door. Thermal imaging indicated a substantial temperature differential. Electronic moisture testing indicated elevated moisture levels.



Location: Adjacent bathroom to the second-floor right rear bedroom.

Comments: A larger area of staining was located on the opposite side of a wall, immediately adjacent to the staining in the bedroom. Thermal imaging indicated temperature differentials beyond the area of staining.



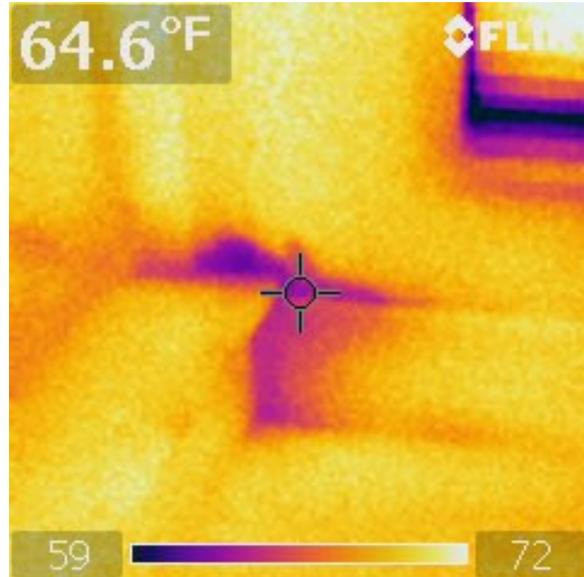
Location: Attic access.

Comments: Inspection of the attic space above the bathroom/bedroom staining disclosed a sewer vent stack passing through the wall. There was apparent organic substance on the PVC pipe at the insulation level. Removal of the insulation disclosed a detached bathroom ventilator fan duct. An area of wet and stained framing material was evident below and adjacent to the sewer vent stack. It appeared there was no leakage of the vent stack. Condensation of the moist air being discharged from the bathroom vent on to the colder vent stack piping is the suspected cause of moisture damage.



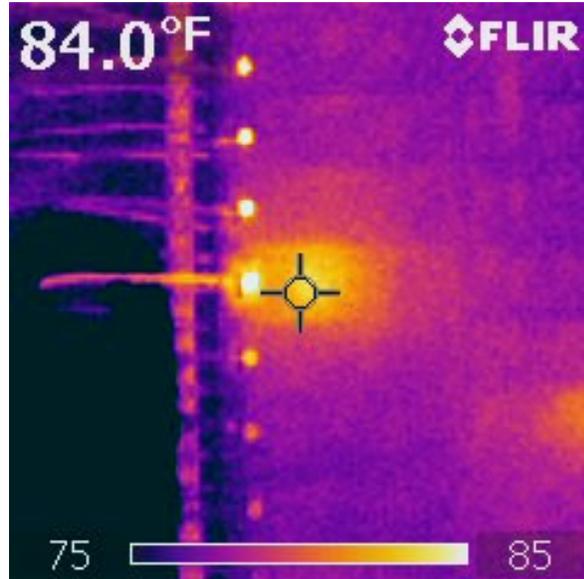
Location: Master bathroom Whirlpool tub.

Comments: There is water damage at the wall adjacent to the master Whirlpool tub. Electronic moisture testing indicated 100% relative humidity. Thermal imaging indicates the extent of this damage.



Location: Electrical subpanels in the utility room.

Comments: The eighth circuit breaker down on the left in the electric subpanel in utility room was excessively warm for the existing load on the circuit. The circuit breaker has a 20 amp capacity. The existing load on the circuit at the time of the inspection was only 8 amps. Infrared imaging indicates a possible inadequate connection at the circuit breaker/conductor terminal connection.



SUMMARY

Issues concerning moisture intrusion around windows, ceilings and at the Whirlpool tub have been identified and their cause addressed. Elevated moisture conditions is a primary cause for construction material failure and for potential mold issues which is a paramount concern to most homebuyers. It is important that these locations be adequately dried and all materials which contain or potentially contain mold growth be removed.

All additional issues noted in this report should be discussed with your real estate agent when listing the house to determine which repairs are required/necessary to be competitive in the current market.

If there are any questions concerning the terminology in this report or as to what and how the property elements were inspected feel free to call at any time (615) 406-6808.

Repairs to the property should be conducted by a licensed contractor. Repairs can be re-inspected by David A. Andersen & Assoc. for 50% of this inspection fee. Inspection of work performed by licensed contractors will assess whether the repair addresses the issue/concern reported in this report. Re-Inspection does not address adequacy of the licensed contractor, or compliance with municipal codes.



David A. Andersen

ITC Certified Building Science
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