

# Water Infiltration

Interior Conditions:

Temperature: 23C

Humidity: 46%

Outdoor Conditions:

Temperature: 32C

Humidity: 76% to 80%

Sunny

Light Breeze less than 2 mph

Reason for inspection was to determine the location of the water leak(s) that has caused extensive damage in the lower level of the home.

At the time of the inspection there had not been any indication of water leaking in the lower level ceiling for a few months. The last time remembered by Susan was the ice storm in March. The moisture content of the ceiling in the areas that showed damage was low and in the acceptable range 7%-14%.

To locate the source of the leak water testing was done. The first area of concern was the front of the patio area. Since all the stone on the walking surface had been replaced and a membrane was installed on the underside it is unlikely that source is the walking area. The front of the patio under the railing and pillars was tested first. After 10 minutes of constant water there were no signs of water within the ceiling of the room adjacent the bar.

The next test was the exterior wall northwest corner. The test was to be done for 10 minutes but water was showing after only 3 minutes. The cause was cracks in the stone and the joints above the gas line next to the BBQ.



All other water tested areas showed no signs of leaking. The same tests were conducted along the wall and doors in front of the office and the windows in front of the spare bedroom windows.

According to Susan the leak starts in the bar area and then continues to the large room north east of the bar, then to the spare bedroom. It is very possible that water travels along the beam to the other rooms. According to the plans there are 3 beams that run from one end to the other in a continuous line. This was also confirmed with the Infrared camera. In the larger

room there is a second beam that is under upper level wall. There is also water damage along this beam.

The water maybe entering at other points along the exterior wall but there locations were not found. It is very possible that the only entry point is the spot that was confirmed. The water could be traveling along the beam. The spray foam insulation maybe creating a channel that water is traveling along.

There are other areas of the stone work that is in need of repair. They are as follows:



Corner outside of spare bedroom behind potted fir tree. There is flaking mortar and damaged parging.



Area above the potted fir tree outside of the spare bedroom, cracks in the mortar and mortar that has become soft.



Railing and pillars above the spare bedroom. This damaged mortar is consistent with the condition of the railing the length of the patio.

To find out if there are multiple entry points and to see what the extent of water damage is within the ceiling and walls. The next time there are conditions that cause the leaking a thermographer should be brought out as soon as the signs of leaking are present. This way the area of damage can be marked and the location or locations of the leak located. It is difficult to reproduce the conditions that cause all the areas to leak. I feel confident that we have located the main cause.

The carpeted area of the spare bedroom at the floor to ceiling windows was wet at the time of the inspection. The conditions for the growth of mold present and evident. It appears that the caulking in the lower areas of the windows has failed and needs to be addressed. This is the likely cause of the leak. There is evidence that the window on the northwest side was leaking from above but a repair has been made in that past there was no evidence that it is still leaking.

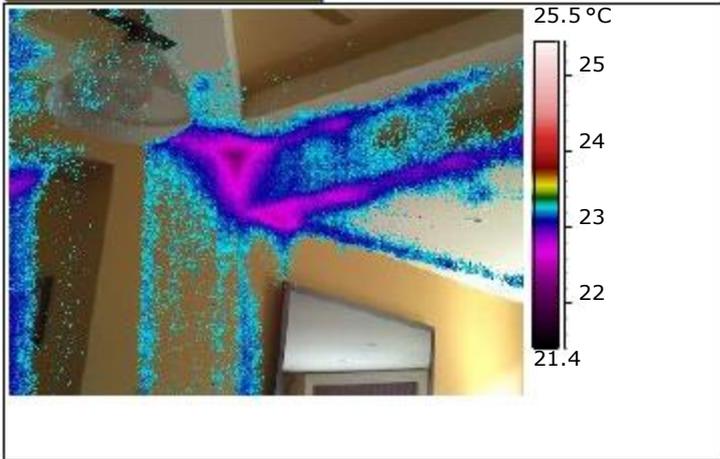


**Photo and Identification**



Location	Lower Level Bar
Equipment	
Type	
Nom load	
Actual load	
Fault	
Recommendation	Dry no moisture readings above 14%

**Thermogram 30/05/2013**



Atmospheric Temperature 23.1 °C

**Analysis & Recommended action:**

This image was taken before the testing was done. The blue and pink areas are not moisture. They are temperature difference in the steel beam in the wall. There was no moisture present at this time.

**Inspected by :**

Signature:.....

date:

Repaired by: ....

date:

Comment:.....

