

C.L.I. Thermal Imaging

Technology Proves Valuable in Building Damage Surveys

Water is by far the leading cause of damage to buildings throughout the U.S. Inspecting the damage is a tricky business and can be very costly and time consuming. In some cases, such as a broken water pipe, the damage may be plainly evident, while in other cases, the cause for water damage may be completely unknown and/or concealed from view. In the later cases, destructive means are used to locate the problem with limited success. This leads to the escalation of costs related to the problem.



Another issue which arises by using destructive methods is mold. If there has been leakage into the building envelope from some source and unseen fungal amplification has occurred the last thing a contractor may want to do is start tearing walls out, etc. Doing so could leave them responsible for a large scale mold remediation. Infrared thermography reduces the risk of such occurrences by allowing the investigator to spot anomalies in the images to determine the location of the problem and isolate it before opening walls, ceilings, etc. It also reduces the guesswork involved in locating the source of the leak.

The image shows an infrared image taken along the wall/ceiling line in a home with a suspected roof leak. By isolating the area where the suspected leakage was occurring, the cost of repairing the problem was minimal and the source of the problem was more easily determined and corrected.

Infrared surveys are faster and more cost effective than other methods of surveying a structure for damage. In most cases, the thermographer can work alone and from the ground. This eliminates the need for expensive scaffolds, etc. during the survey. It is also much faster than other methods of surveying a building for moisture damage. The use of electronic moisture meters limits the investigator to those areas which can be easily accessed (meters require contact) and are limited to each specific area inspected with the meter. An infrared survey of the area allows us to see the area in its entirety and allows us to save visual documentation of the findings. Suspect areas are then confirmed using data-logging moisture detection equipment with time stamps to assure the integrity of the information. Using the traditional type of moisture meter requires that the investigator manually record their findings which can lead to mistakes.



It has been our experience that many traditional home inspections may discover some traditional indications of moisture in buildings (e.g. stains, efflorescence, etc.). The visual indications may not look serious at the time they are inspected. However, further evaluation using infrared thermography has shown the problems to be much more significant. Moisture inside of the wall cavity can do considerable damage before showing up visually at the interior surface. This can be especially true if vinyl wall coverings have been used.

As an indoor air quality investigator that has worked on many construction defect investigations relating to mold claims, I can say that I have witnessed numerous cases where the

problems and costs escalated due to poor investigation of the problem sources and the poor investigation techniques of the parties involved. All too often, insurers are slow to respond to water damage claims and when they do respond, it is often by sending in a team of indoor air quality professionals to perform a battery of air and surface sampling which may or may not be needed. In many of these cases little attention is given to the sources of the problems. By using an infrared survey, we can more readily pinpoint the areas requiring immediate attention thereby reducing the risk of fungal amplification after a water damage incident.

Closer Look Inspections uses a thermal imaging camera as just one more tool in our investigations. In addition, we use meters for evaluating other parameters in the building including CO₂, CO, %RH, temperature and dew-point. We also may use laser particle counters and other equipment to gain a more thorough picture of the problems and the most cost effective remedial measures. This translates into reduced costs to insurers and less inconvenience for occupants of the building. It is important that the investigator be using reliable equipment. This means equipment that is well maintained, calibrated (to a N.I.S.T. traceable source where required), and able to data-log all readings for inclusion in the final report. In many water damage related cases, documentation is critical as the results may have to be defensible in court.

Further information on our services, fees, etc. is available by calling us at 440-946-7191. We specialize in construction defect investigations, commercial & residential property inspections, indoor air quality, HVAC system diagnostics and testing and Phase I Environmental Site Assessments.