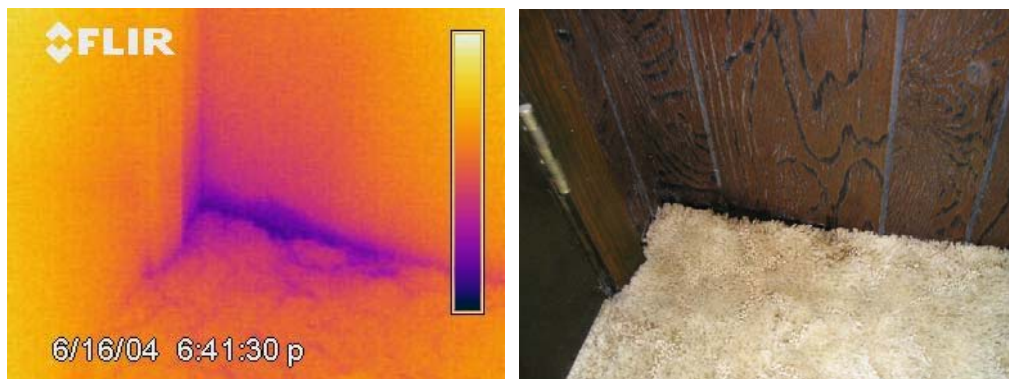


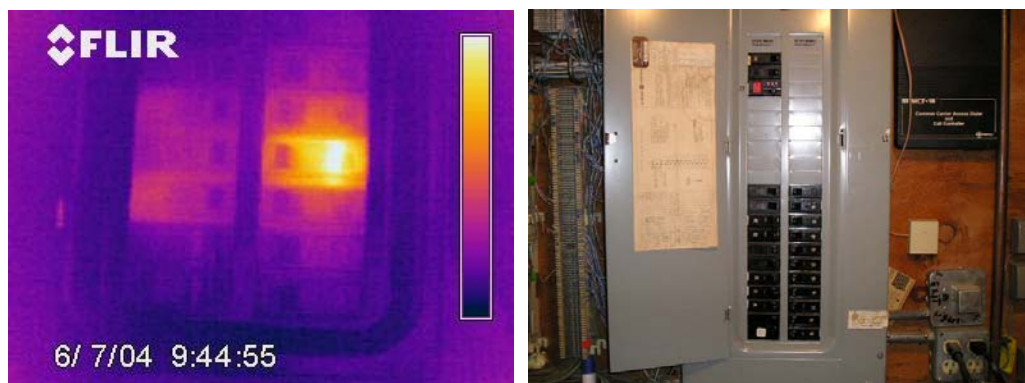
## ***Using Infrared Thermography to Assess Building Problems***

Alfred L Tibbs Jr., President  
Closer Look Inspections

Closer Look Inspections is the only Cleveland area company that uses infrared thermography to detect and assess building damage during investigations. By spotting thermal anomalies in the infrared images, we are able to pinpoint areas where moisture is concealed inside of walls, roof covers are leaking and electrical circuits are overheating. The use of infrared thermography also makes it possible to find areas of hidden moisture within a building where mold growth is likely to occur. The two photos below show how thermal images are used during moisture assessments. The client contacted us complaining of strong mildew odors in the home and claimed there was not any water leakage. By using infrared thermography we were able to pinpoint the location of water penetration into the wall and show area of saturation. Further investigation revealed hidden fungal amplification both inside of the wall and under the carpeting. The problems were corrected and the odors were alleviated.



Another project in which we used infrared thermography to locate a problem is shown in the two images below. It was noticed during a commercial inspection of an office/warehouse that lights were flickering when other lights were turned on. By looking at the electrical distribution panel we were able to easily spot the problem circuit. Further investigation revealed that the circuit breaker was undersized for the intended application and was double tapped. This presented a fire hazard and shock hazard.



In addition to moisture and construction defect investigation, infrared thermography is an excellent tool for use in a proactive building maintenance program. By performing annual low slope roof scans, building owners can save potentially tens of thousands of dollars by repairing damaged roof membranes as opposed to complete replacement. By maintaining the roof in this

fashion, the building owner can also reduce the risk of mold infestation and the liabilities involved in such problems.

Another area where Closer Look Inspections is using infrared thermography to reduce costs to building owners is in basement waterproofing. Homeowners are often sold expensive waterproofing jobs which may not be needed. With the average cost of \$125 -175 per linear foot for an exterior basement waterproofing job, consumers could save thousands of dollars by having the condition evaluated using infrared technology.



The image on the left was taken on a recent project we were hired to evaluate. Thermography was successfully used to track the moisture problem to its source. In this case, a sump pump discharge line was broken and was discharging along the exterior foundation wall below grade. The homeowner was given an estimate of over \$14,000 to excavate the entire foundation, replace drain tiles, etc. By pinpointing the problem using infrared thermography, the sump discharge line was replaced and the problem was corrected. Cost: Less than \$500, a savings of over \$13,000!!

The price of a basement waterproofing job alone is justification for spending a few hundred dollars to have the conditions assessed by a consulting firm using thermography.

The same is true of many roof replacements. By using thermography, repairs can be made as opposed to complete replacement. This can save tens of thousands of dollars when dealing with low slope commercial roof applications.

Although thermography has been around for years for military and large commercial uses, it was cost prohibitive for smaller commercial and residential building owners. Recent developments in the technology has reduced the costs making it affordable for every building owner to utilize this valuable service.

Closer Look Inspections is Northeast Ohio's leading forensic inspection company, specializing in building science, indoor air quality, building code interpretation, construction defect investigation and expert case documentation and preparation. With over a quarter of a century of construction experience and over 15 years of inspection, building code, indoor air quality and construction defect investigation experience we can provide you with quality services at competitive prices. Call today to discuss your needs 440 946 7191.