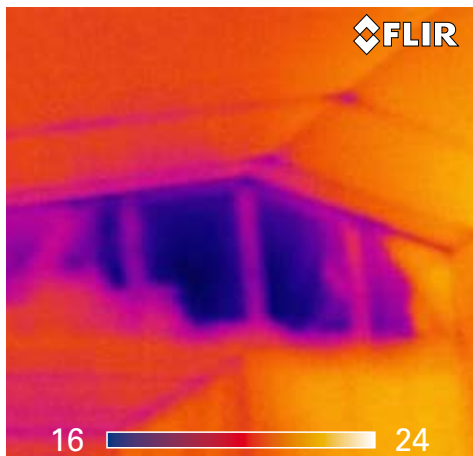
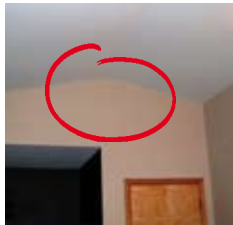


Control of energy efficiency and waste in building

An infrared camera will quickly and effectively detect areas of missing, moisture-laden or otherwise damaged insulation in walls, ceilings, floors, crawlspaces, attics or around doors, windows, electrical outlets and other access places where it would normally not be detected. This is particularly important for buildings with poor ratings in an energy declaration, where improvements can be focused on the most relevant areas. Contrary to other traditional methods an infrared camera produces images of the problem

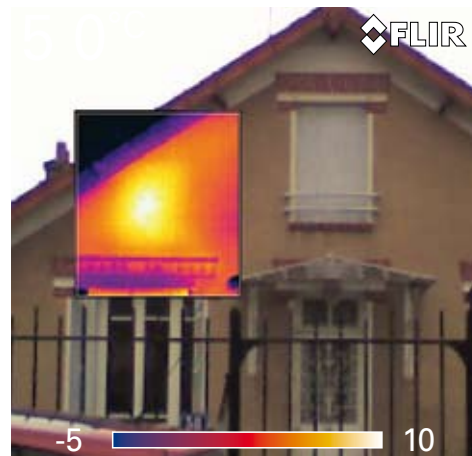
areas – thus revealing exactly where the problem areas are and which actions need to be taken. An ordinary air tightness test reveals how airtight the building envelope is – an infrared image shows where the problem is. The new FLIR Reporter Building software works together with an infrared camera to visualize and quantify building related problems. With new unique features and new special building report templates it enables quantifying and estimation of cost of energy loss.

Missing insulation



Missing insulation causes severe energy loss.

Missing insulation



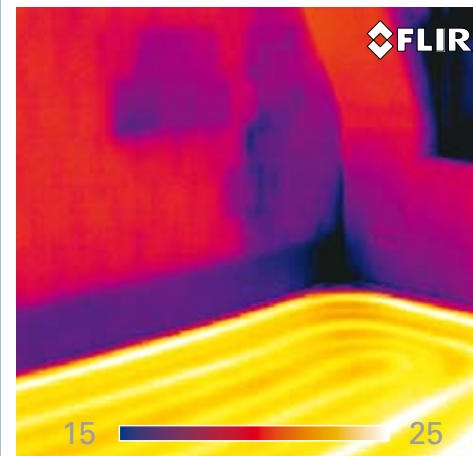
The infrared Picture-in-Picture image shows a point of missing insulation.

Locate and evaluate water damage and moisture intrusion

An infrared camera is an ideal tool for a building moisture survey as it detects moisture by imaging the different temperatures of wet versus dry building materials. This enables infrared to see and locate moisture problems before other standard moisture detection equipment. Another useful advantage is that with infrared you can inspect places that physically can not be entered. Infrared cameras instantly capture and record high-resolution infrared images of the water damage. Once the cause of a moisture

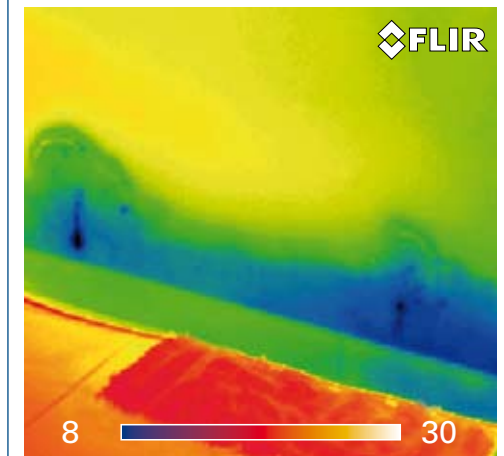
issue is repaired, infrared can be used to monitor the drying process, showing when the moisture is completely gone. Infrared technology takes the guesswork away, by locating problem areas with speed and extreme accuracy, and finds issues hidden within walls and ceilings.

Water damage



A hidden pressure line leak can be easily spotted with a thermal camera, even from a distance.

Moisture problem



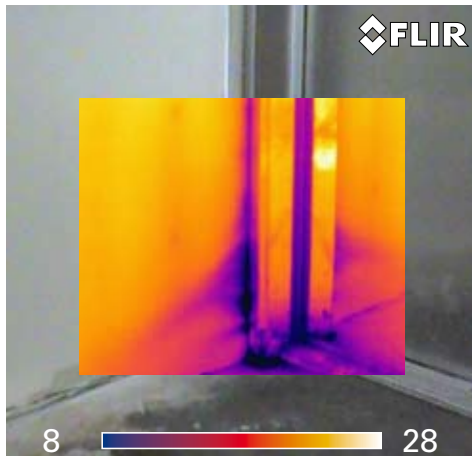
Wet wall intrusion, impossible to see with the human eye, but clearly visible in infrared.

Detection and visualization of air infiltration and exfiltration

Excessive air leakage can account for up to half of the energy consumed to condition buildings. Adequate air exchange is essential for the occupants' health and safety, but most buildings have a far higher rate of air exchange than is necessary. The main reason is often poor design and/or construction which allows air leakage from the inside to the outside of the building. The leakage pathway is often complex and,

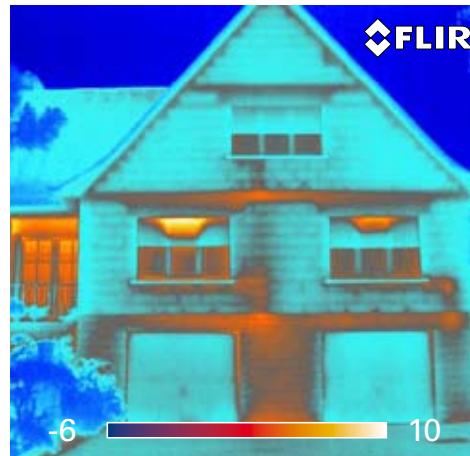
without thermal imaging, extremely difficult to visualize. With the help of infrared the contractors can quickly identify and repair problem areas for an immediate stop of energy loss.

Air infiltration



Air infiltration of cold air shown using the Picture-in-Picture function.

Air exfiltration



Air exfiltration of warm air leaking from the inside.

Leak detection in roof systems

Roof leaks can cause costly damage to a building's structure and severe discomfort to its inhabitants. Infrared inspections quickly identify missing or moisture soaked insulation under a flat roof membrane where the insulation needs replacement. This permits partial repair of failed areas rather than the much more costly replacement of the entire roof. Infrared inspection of flat roofs, especially built-up roofs has been proven for a number of years. The technique allows for the detection of moisture trapped in a roof system, a problem that over time leads to the premature degradation of the roof and its framing systems.

Moisture intrusion

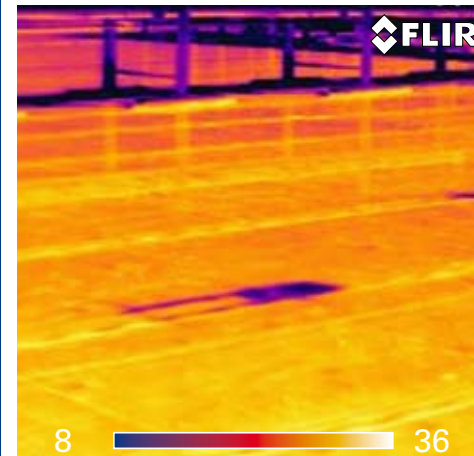
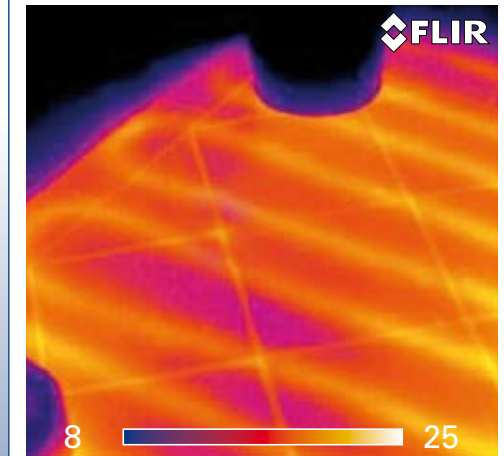


Image of the roof of a refrigerated building, showing moisture intrusion into a hole of the roof.

Inspection of heating, ventilation and air-conditioning systems

Loose, poor-fitting or disconnected heating, ventilation and cooling (HVAC) system ducting can lead to moisture issues and poor building airflow, as well as wasted energy and money! Early detection and correction of these issues via infrared images should be a high priority and will save money and discomfort to both the owner and occupants.

Localizing and visualizing floor heating

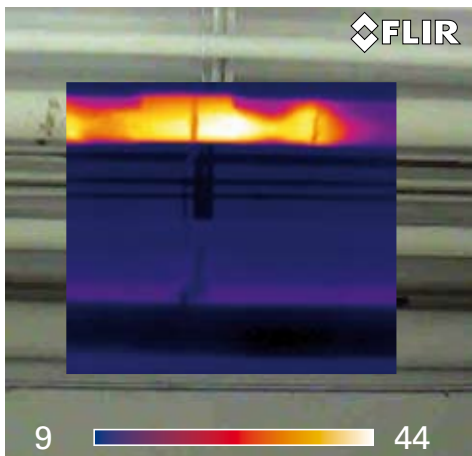


The floor heating system is clearly visible during an infrared inspection.

Inspection of plumbing systems

Blockages in pipes can be quickly located and addressed via infrared – enabling immediate response when required. The use of this nondestructive technology provides for pro-active action to be taken - before the problem gets worse. Water leaks from pipes, whether in a floor, wall, ceiling or under a concrete slab, can also be located using an infrared camera.

Easily find problem areas



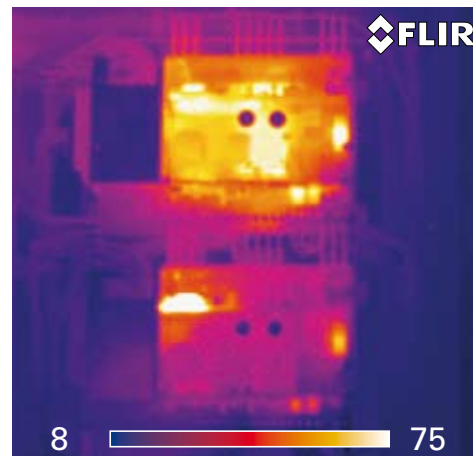
The infrared picture identifies the exact place of a problem in a water line.

Inspection of electrical systems

Issues with electrical connections, wiring or other system components are clearly highlighted as “hot spots” with infrared images - making them easy to locate and repair as part of an ongoing restoration project or building addition.

Infrared cameras are very effective at quickly and accurately detecting overloaded circuits, faulty wiring and loose electrical connections.

Detect overheated connections

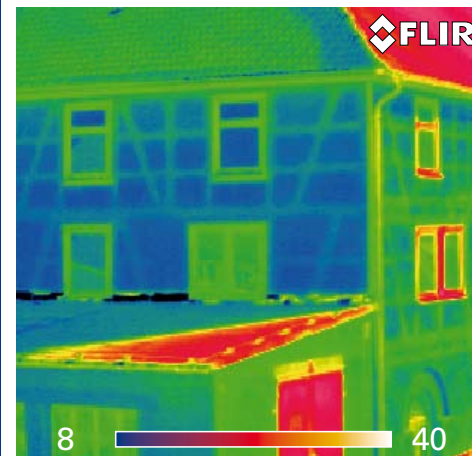


Inspection of this fuse box reveals an overheated connections.

Inspection and visualization of building constructions

Infrared is being used with great success to see the underlying building construction. One common application is to verify bond beams and placement of reinforcing in concrete masonry unit walls, as well as structural elements of pre-cast, tip-up walls. Because the inspection is conducted during construction, deficiencies can be corrected prior to occupation with relatively minor inconvenience. Due to high energy costs as well as health concerns regarding mold growth in cold wall cavities, verification of placement of insulation in masonry unit walls is now much more important than in the past.

See underlying constructions



Infrared instantly reveals the underlying construction and sometimes construction faults.

