APPLICATION STORY

"We make life colorful" is the slogan of the painting company Meyer Malereibetrieb GmbH in the town of Lehrte in Lower Saxony

THERMAL IMAGES AS IF PAINTED

A painting specialist in Lower Saxony takes advantage of thermal imaging for indoor and outdoor applications.

FLIR E50bx thermal imaging camera and FLIR MR77 moisture meter

Meyer Malereibetrieb GmbH (www.malermeistermeyer.de) is a specialized painting company originally founded in 1960 by the grandfather Johannes Lange in the town of Lehrte in Lower Saxony. Today the company employs 13 people. Its main services include work on interiors (painting, lacquering, wallpapering, staircase renovation and design) and exteriors (facade insulation and design). Martin Meyer, grandson of the company's founder, uses modern technology to be able to show problem areas to property managers and owners. The technical equipment of this innovative painting company includes an E50bx thermal imaging camera and a MR77 humidity meter from FLIR.

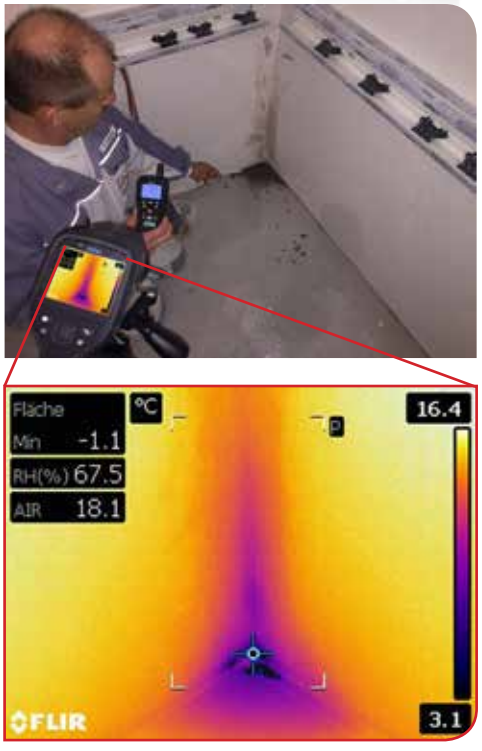
Camera selection

Martin Meyer first became aware of the possibilities of thermography in 2006 at various local company presentations, during which even a chimney sweep presented his thermal imaging camera. "At that time, the devices were simply still too expensive," explains master painter Martin Meyer. And thus it took quite a while before investing in a thermographic camera became a reality. In 2014 the time had come. Martin Meyer contacted FLIR and had two thermal image camera models demonstrated: the compact Ebx series and the convenient T series with its swivel lens. Even though he was quite interested in the T series with its higher resolution and larger range of features, he decided on the FLIR E50bx for rational and economic reasons.

Martin Meyer opted for the smaller model, which would pay for itself quickly even when used only occasionally. The master painter particularly liked features such as image-in-image or the patented MSX feature of the FLIR E50bx, in which structures of the visual image are added to the thermal image.

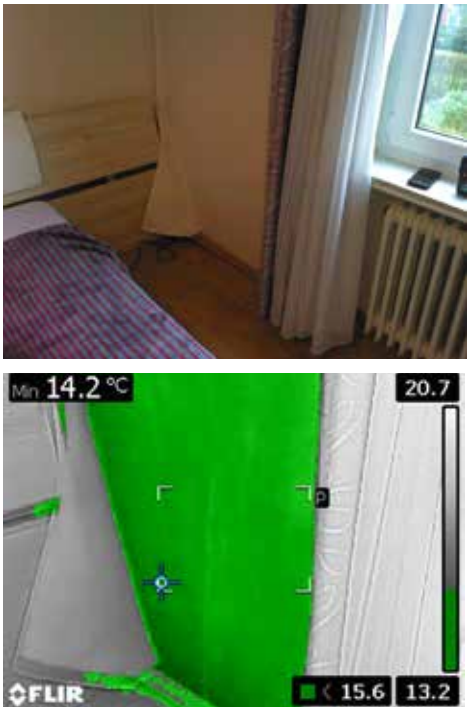
Facade insulation

His company has been offering thermographic inspections using the FLIR E50bx since January 2015. Thus building weaknesses and insulation errors can be localized quickly



Frank Lochow, an employee of Meyer Malereibetrieb GmbH, examines a spot affected by moisture using the FLIR E50bx thermal imaging camera and the FLIR MR77 moisture meter.

With an air temperature of 18°C and relative humidity of 66.5%, the low temperature of the wall is a problem and can result in mildew. Martin Meyer suspects a non-insulated expansion gap between this and the neighboring house right behind the back wall as the cause of the wall's low temperature.



A dew point or condensation alarm (green) indicates the problem area where mildew can be expected if the room is left as is with the current wall temperature, air temperature and relative humidity.

and precisely. "I used to explain to property managers and owners where the heat losses occurred and which savings we could achieve with insulation." But I was not always able to convince them using these arguments alone. "Today we make the need for improvement really visible to the customer, by using a thermal image of the facade. This way, we can clearly show the sources of error and provide comprehensive consulting with regard to energy savings." And the best part for customers is: If they decide to have Malereibetrieb Meyer insulate their facade using a thermal insulation system following such an examination, then they are not charged for the thermography.

Mildew problems following restoration

But Martin Meyer no only uses his E50bx in the external insulation area. "Our focus is on interiors and we work for several local property managers in this area. Problems with mildew have become more common in the past few years." He sees the habits of tenants as one of the main reasons for this: "Older buildings often don't have the most modern windows and sometimes tenants leave the heater off in some rooms due to increased energy costs," explains Martin Meyer. But some mildew problems are also the result of insulation that is too good without an appropriate ventilation concept.

Leaky underfloor heating system

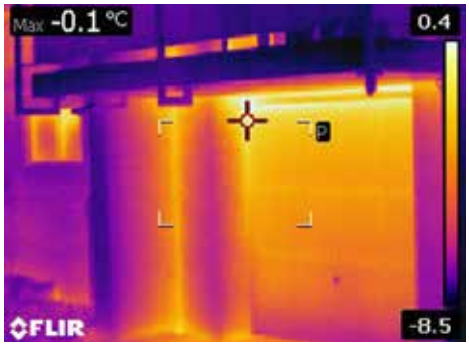
The thermal imaging camera has also served him well in the investigation of underfloor heating systems. Prior to interior restoration of a building, Martin Meyer insisted on examining the over 20-year-old underfloor heating system. On the upper floor, he did in fact find problems. "The heating system was not performing correctly, so we conducted further tests." In addition to his thermal imaging camera, Martin Meyer also used the non-invasive moisture meter MR77 from FLIR. He is impressed with the compact device: "I place it in the room and it automatically transfers the relative temperature and humidity data to the thermal image." This way he was able to locate a spot on the wall affected by moisture. He could also show the heating contractor exactly where to open the wall. And sure enough, there was a small leak in the underfloor heating there, which could then be professionally repaired.

Software and training

To evaluate his thermal images, Martin Meyer uses the FLIR Tools software included with his camera, as well as the FLIR Reporter software, which allows for individual settings including creating reports with his own logo and presettings. An introductory course was also included in the purchase price of his camera. "But actually I should have taken the course before buying the camera," says Martin Meyer. "By exchanging information with other participants and taking the course, I learned which thermal image resolutions are useful and required for which applications."

Conclusion and outlook

"For us the investment in a thermal imaging camera has definitely paid off," says Martin Meyer. "We are the only painting specialist in the area, who can offer these services."



The tenant of this apartment complained about the permanently cold floor. The problem: The concrete slab of the balcony unintentionally served as a thermal bridge. Through the concrete slab, the apartment was therefore also heating the garage. The remedy consisted of insulating the garage ceiling from below.

For more information about thermal imaging cameras or about this application, please visit:

www.flir.com/instruments