



FLIR thermal imaging camera helps find water leakage at Italian swimming pool

The administrator of a holiday apartment on the Italian island of Sardinia noticed there was a problem with the swimming pool: it was leaking. Badly. The pool was leaking at a rate of almost 19,000 liters of water per day. This particular apartment is located at the village Porto Rotondo, at the Costa Smeralda, the northeast coast of Sardinia, which is a very popular – and thus relatively expensive – holiday destination. He made this discovery at the beginning of the summer, just before the high season started, so the problem had to be fixed – and soon – before the guests would arrive.

That is why the administrator hired a thermography consultant: Fabrizio Contino of the Sardinia based consultancy agency Termografia Express. "We suspected that the leak was located in the pipes that automatically clean the pool, continuously sucking out sludge and debris. But these 60 cm wide pipes are located all around the pool, so we had to find out where these pipes were leaking exactly."

Saving time and money

The conventional method to find the leakage would be to open up the pavement around the pool and dig up the sludge pipes, but that was not an option. That would take too much time; paying customers would be denied access to the pool due to the repairs if that method was used. "That is why we chose to perform a thermography survey of the pool's surroundings."

Using the sun as illuminator

An initial survey did not show enough decisive signs of leakage, so Contino took it one step further. He plugged the nozzle of the pool cleaning system, thus pressurizing the water in the pipes. "The pavement was warmed up by the sun, so at the location of the leakage we suspected that the water leakage would cool down the pavement. So after waiting for two hours we performed a second survey and looked at the differences between the two. And just like we thought there were two suspicious areas in the second survey that appeared cooler in the thermal images. So you could say we used the sun as an infrared illuminator."

Validation

Contino directed the repair workers to the two sites so they could open up the pavement in the suspected areas and dig



The FLIR E60 thermal imaging camera is an extremely versatile tool that can be used for a multitude of different applications.

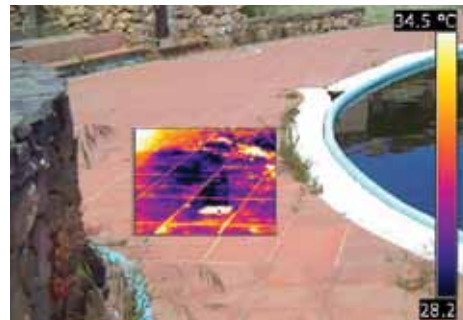
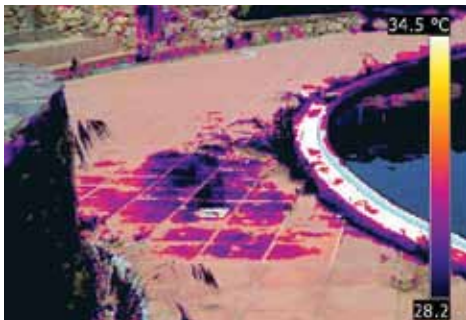
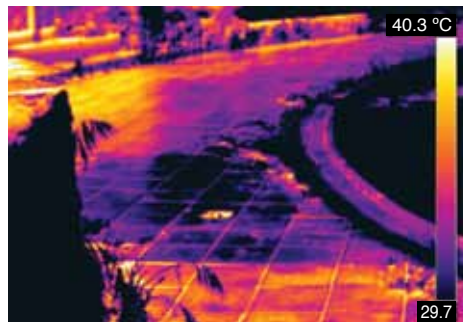


The FLIR E60 thermal imaging camera clearly localized the water leaks.



Contino shares the results of his survey with the apartment administrator on site thanks to the WiFi connection with his iPad.



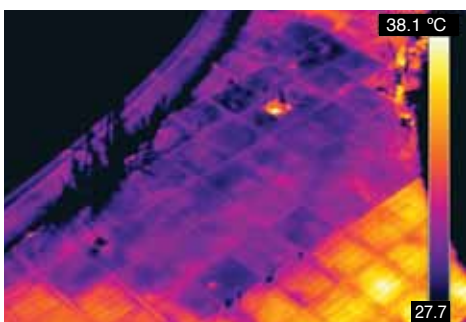


These images show how the visual image and thermal image can be combined into a Thermal Fusion image or by using the Picture-in-Picture feature.

up the pipes. "This showed that some of the pipework in those locations was cracked or broken. This validated the findings in the thermographic survey, showing very clearly that this method had led to an accurate localization of the problems."

FLIR E60

The thermal imaging camera used by Contino during this survey was the FLIR E60 thermal imaging camera. Its microbolometer detector produces thermal images at a resolution of 320 x 240 pixels



Visual and thermal image of one of the two suspected areas.

with a thermal sensitivity better than 0.05°C. The highly detailed thermal images show any temperature related fault, no matter how small. With powerful features such as picture in picture and thermal fusion the FLIR E60 is considered to be the perfect tool for thermographic surveys by many thermographers.

WiFi connectivity

"I especially like the fact that I can immediately create reports in the camera", says Contino. "With the new thermal imaging cameras from FLIR you even have WiFi connectivity, so you can immediately show the results to the client. This really is a great plus. This allowed me to indicate the exact location not only to the client, but also to the contractor in charge of the repairs."

Due to the precise localization and immediate communication of the problem the repairs were swift and the pool was repaired before the guests arrived. "The use of a thermographic survey with my FLIR E60 thermal imaging camera has saved time, effort and money."

Not only did this save time and money, it also helped safeguard the good reputation of the apartments, according to Contino. "The alternative would be to break around the perimeter of the pool, making it unusable for a long time which would make it unavailable to the inhabitants of the apartment. This would have cost a lot of money, but even more importantly, it would have taken a lot of time. Time that the apartment administrator

simply did not have, given the fact that paying guests were arriving soon. Due to the swift and effective repairs that were enabled by the thermographic inspection the pool was up and running when the guests arrived. Without the inspection this certainly would not have been the case."

Versatile tool

According to Contino this is just one of the many cases where the FLIR E60 thermal imaging camera has proved its worth. "It really is a great tool. You can use it for many applications. I use it for the monitoring of hydraulic systems, electric systems, engines and mechanical systems, but also for building surveys and photovoltaic installations. Sometimes veterinarians hire me as a consultant and I also cooperate with several medical facilities. It really is an extremely versatile tool."



The repair workers were directed to open up the pavement where leaks were inspected, to find broken or cracked pipework, validating the results from the thermographic survey.

Contino speaks very highly of the user friendly design of the FLIR E60 thermal imaging camera, but there's more to thermography than a good camera, he stresses. "It is very important that you also know what you're doing. That is why it is very important that FLIR Systems also offers first class training to go with its first class products. I have followed a course at the ITC and now I'm a level 1 certified thermographer. Without such training I don't think I would have been able to help the administrator of this apartment to fix the problem as swiftly and adequately."

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

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