The Benefits of Thermography

Although infrared technology is being used in numerous industries to locate and solve any number of thermal related problems, this article will focus on the application of thermography to moisture investigations. There are thousands of companies in the United States that serve customers who have moisture and mold related issues. Moisture is everywhere. Like many things, it is good when in balance. But too much moisture in our buildings can result in costly deterioration of the materials and mold growth, leading to unsafe living or working conditions. That's a problem! The customer is trying to find someone who can locate and determine elevated levels of moisture in their homes and commercial buildings. And if that situation is out of balance, the customer wants it returned to acceptable levels. That's why you, the water damage specialists, are needed.

How can the professional quickly and accurately locate moisture issues? Moisture meters and borescopes have been and are still the recognized tools for verifying the presence of moisture when it is not visible. But using only a moisture meter in the investigation can be a very slow process. This is where the IR camera becomes so valuable. First of all, it must be stated that the IR camera is not a moisture meter. It is a thermal imaging camera that detects temperature differences. Where there is moisture there is usually evaporative cooling or the building can be modified to enhance evaporative cooling. Since evaporative cooling lowers the temperature of surfaces containing moisture, the IR camera can easily and quickly locate areas to investigate. The IR camera and the moisture meter work together. So, after the IR camera locates an anomaly we verify the presence or absence of moisture with a moisture meter.

There are many benefits to using thermography in moisture investigations. We will address the benefits to three groups of people: (1) water damage specialists (2) property owners (3) insurance companies.

Water damage specialists: IR cameras can both make and save money. Saving $200.00 is like making $200.00. But we want to both save and make $200.00 resulting in $400.00, right? First of all, we have to agree that time is money. Every hour you spend on a job costs you money and has to be passed on to the customer. If suddenly the job is going to take an extra day not accounted for in your bid, you immediately translate that into lost profits, right? So, time is money. How long would it take you to check 2500 square feet of floor, wall and ceiling for unseen moisture using a moisture meter? Answer: A very long time plus it would be easy to miss areas. You would lose time and accuracy. That's expensive. How long would it take you to do the same job using an IR camera and a moisture meter? Answer: a fraction of the time. A trained thermographer could pan through a room that size and check questionable areas in a matter of minutes. That means a fraction of the expense. As for monitoring the drying process with just a moisture meter you are flying a little bit blind. It would take a lot of time to check every square inch of the area you are drying down and you

can easily miss small areas of moisture. On the other hand, the IR camera can quickly, in a matter of minutes, show you and the customer the progress of your dry down and where to focus your efforts. You are saving time and money. You are getting a great return on your investment, both in dollars and customer satisfaction.

We know we can save money with an IR camera. But can we make money; can we charge for the use of an IR camera? Yes, because the camera is offering your customer a better service, a more thorough service with visual documentation. A couple of years ago I ran across the U.S. Department of Energy website that made some recommendations for those who were considering buying a house. Under the Office of Energy Efficiency and Renewable Energy, Consumer Energy Information: EREC Reference Briefs, Thermography, it said: "In addition to using thermography during an energy audit, you should have a scan done before purchasing a house; even new houses can have defects in their thermal envelopes. You may wish to include a clause in the contract requiring a thermographic scan of the house…The cost of a thermographic inspection ranges from $200 to $500, depending on the size of your home and the service provided." In that article the government acknowledged the benefits of IR technology for the consumer and the value was stated in dollars.

What is another benefit for you, the water damage specialist? As you well know, we live in a litigious society. Doing a great job doesn't always protect you against litigation. How much can you lose in a law suit where the customer **claims** he/she has mold due to your not drying down their walls completely? Who wins? The one with the best documentation! Do you have good documentation clearly showing you left the property dry? There's no better documentation than "before" and "after" IR images (along with moisture meter readings) showing that you completed the job. The savings due to a successful defense in a law suit can more than pay for the IR camera.

Have you ever been accused by an insurance company of keeping your equipment on the job too long just to increase the charges? And have you ever given in and dropped your charges just to protect future business opportunities with that insurance company? We all want fair treatment. The IR camera images can serve to document the need for your equipment that extra day and result in a fair payment.

What are the benefits of being awarded extra jobs, especially extra large jobs? Given a level playing field in all other areas, the company with the better technology often wins the business. There's a consumer confidence level that goes with high tech, especially with something like the IR camera that visually shows the customer "invisible" moisture. It is nice to see the confidence and satisfaction that the customer has when they can see the moisture before the dry down and then the absence of moisture after the dry down. A "happy customer" translates into faster payment, great referrals, and increased future business. It

also prevents most customers from thinking about litigation down the road. They know you have good documentation.

Property owners: When the property owner benefits, then you benefit. What are the financial benefits of thermography to the property owner? Going back to the reason for your existence as a water damage specialist, the property owner needs to protect two of his most valuable assets, his property and his health. Water can deteriorate the property and cost a fortune down the road. Mold can adversely affect the health of the occupants, which is something that is priceless. So, the better job you do in removing excess moisture, the more the property owner benefits in all of these ways. The customer who is being serviced by a trained specialist using IR technology is benefiting more financially than one who is not.

Insurance companies: Insurance companies are concerned about keeping their customers happy so that those premium dollars keep coming. They are also concerned about keeping their cost down to a minimum. This is good business. Insurance companies, like all of us, have had some bad experiences where they believe they have been taken advantage of. Many believe they have been charged extra for keeping equipment (blowers and DH's) on the job longer than necessary. One of the great benefits of IR technology for the insurance company is the pictorial documentation covering the need for equipment. The adjuster believes that the dry down should have been completed in three days. The IR camera showed that moisture was still present on the fourth day demonstrating the need for additional drying.

When an IR camera is a poor investment: To reap the financial benefits mentioned above, two things are vital. (1) Good training in the physics of infrared and the principles of thermodynamics. (2) Commitment to use it. If you are not going to invest in good training and a commitment to using the camera as often as possible, then you might want to wait.

We have seen a positive trend in the use of IR cameras by water damage specialists. More and more companies are choosing to add this technology and it appears that it will continue to go in that direction. Should you wait for the prices to go down? Like one owner said (who bought a camera a few years ago when they were higher): "The most expensive thing I could have done would have been to wait. I've made a lot more money by having the camera than I would have saved by waiting."

We are hearing more and more owners in the water damage restoration industry ask the question: Should I invest in an infrared camera? You might want to think of it this way: If it costs $1.00 and makes you $.50 it was a poor investment. If it costs $15,000.00 and makes (or saves) you $100,000.00 it was a good investment. It appears to be our nature, though, to focus on the front end expense rather than the back end return on investment. All successful business people will tell you:

It's not what it costs; it's what it makes or saves that determines whether or not it was a good investment. We all know that. The purpose of this article is to discuss the benefits of thermography and the application of IR technology to the restoration and remediation industry so that you can better decide if it is a good investment for you.

What kind of investment are you looking at? Most full radiometric IR cameras with good post analysis report software run between $4,500 and $9,000. If you charge or save only $45.00 a day the camera will pay for itself in 5 months to 10 months depending on which camera you get. And you can easily use the camera for 5 years or more. The technology is not going to become outdated.

There are risks in everything, including being in business. So, if you are hesitating to invest in an IR camera and the training it's probably because you are not sure of the back end return. You see it as a risk. Hopefully this article will help you make an informed decision if, and when, you consider adding IR technology to your business.

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