

TECHNOLOGY

## New wave

*Infrared imaging technology is changing how building inspection is done.*

BY HAL COHEN

Two years out of LSU, Spencer Maxcy's career in home inspections was not going as well as he'd hoped.

"Business was OK," he says. "But I wasn't making enough to support a family or anything."

It was 2004, and Maxcy got a call from David Cangelosi of Cangelosi-Ward general contractors. Cangelosi's daughter, a friend of Maxcy's, had attended Ole Miss, and Cangelosi had stumbled on an article in the *Ole Miss Alumni Review* about a company called HomeSafe Inspection that was franchising infrared home-inspection technology.

The technology was invented by an erstwhile Ole Miss physicist named Peng Lee, who had developed it in the 1990s while working under a USDA grant to identify insect infestations by their sounds. He added IR imaging to find where to listen and set up HomeSafe in 2003. Lee quickly franchised across the South and into the West Coast and Northeast.

Maxcy pulled together enough money to pay HomeSafe's mid-six-digit franchise fee about a year ago and renamed his company Advanced Building Inspections. He pays another \$1,000 a month for leasing the equipment.

That has placed him, along with a few other local firms, on the cutting edge of home-inspection.

### Seeing water, hearing bugs

Infrared is the light wavelength just beyond the red end of the visible spectrum, and it shows up wherever heat is given off. IR thus "sees" far more than the naked eye.

Maxcy's camera consists of two devices on a sort of Steadicam mount. On the left is the IR thermograph, and on the right is a conventional video camera that can record from either feed.

IR sees in temperature variation. That means hotspots caused by bad wiring are immediately visible, but other things that vary the ambient temperature—leaking water and missing insulation in particular—also show up.

The easiest scenario is looking at exterior walls in the summer, when temperature variations are starkest. Milder days or interior walls can require manipulating the thermostat, or opening and closing doors and vents. On the other hand, IR is also no help in spotting foundation problems or esti-



**NO SUPERMAN:** It's not quite X-Ray vision, but Spencer Maxcy's infrared equipment allows him to see hidden leaks and termite activity in the homes he inspects. An improperly installed HVAC unit leaks into a stud-and-sheetrock wall, but only the IR image (below right) can see it.



mating the useful life of roofs or appliances, though Maxcy says a competent inspector should be able to do that anyway.

Among IR's greatest advantages is in tracing leaks. The naked eye can only see where a water stream ends—or where mold is growing as a result—not where moisture originates. Without IR, the only way to find that is to pull out sheetrock.

"Those companies don't want me in there," says Maxcy of mold remediators and plumbing contractors. "They want to be able to rip out the walls."

IR is also good at spotting pests. Warm-blooded rats and mice show up. So do termites, which generate heat as they eat.

That's why Lee Stout, general manager of the Bug Man exterminator, has also become a convert to IR. The Bug Man has been in business since 1978, and Stout bought HomeSafe IR equipment a month ago.

"It's working," he says. "It's able to spot abnormalities in a wall where you could have problems."

He did not buy the local franchise rights because of cost considerations, but he says he knows of no other exterminators in town who are now using IR.

When Stout (or Maxcy) sees a telltale termite warm patch in a wall, he pulls out a needle-shaped microphone that inserts into a wall and connects to patented pattern-recognition software that can confirm the distinctive crunch-crunch sonic signature of termites.

In addition to IR and the needle-microphone, Stout's kit also includes a borescope—a small periscope with a light and adjustable mirror that can be punched through a 0.5-inch hole in a wall. It's not that other exterminators can't find the insects, he says, but he can do it without "busting up walls or tearing up whole rooms to find 'em."

### The rest of the herd

Maxcy and Stout are not the only ones in Baton Rouge using IR, but they are among the few.

Michael Gonzalez, president of the four-year old firm Customer Care Inspections, bought an IR system similar to Maxcy's last year. Gonzalez's was made by FLIR Systems, an Oregon-based thermal-imaging pioneer that began as a defense contractor in 1978. His camera works like Maxcy's, though he charges a bit more—\$375 for a 2,500-square-foot house. Maxcy charges \$300, and the typical local price is about \$275.

Like Maxcy, Gonzalez has become a leak specialist. He says the technology is a boon for water-anxious home buyers and sellers, because it allays the "What next?" uncertainty on both sides. Gonzalez, also like Maxcy, is looking to get into more commercial work.

Besides inspectors, a handful of local firms—including engineers GeoSpec and Wynn L. White Consulting and electrical equipper Power Technical Services—also offer IR imaging technology.

But among inspectors, widespread embrace of IR has been slow. "No one is innovating," Maxcy says. "We should have been on the cutting edge of this. Instead, we're barely on the heels of the beginning."

Dave Hartman, owner of Affordable Home Inspections, says he has not gone the IR route because the benefits wouldn't merit the costs for him. "[IR] is a tool that may be useful, and I'm curious about it," he says. "But I don't do it myself. The volume of my business is sustainable."

Others doubt the technology itself. "It's very vague," says Warren Zalfen, president of Capital Home Inspection. "It'll tell you where temperature variance is, but not where moisture is." Zalfen says there's no way to know for sure if the issue is moisture, insulation or something else.

As for Maxcy, he says he'll never go back. In fact, he'd like eventually to expand his business, hire a staff and buy HomeSafe's Lafayette franchise.

"When I'm 30, I won't want to be climbing into attics and crawling around under houses with a goofy machine on my shoulders."

But for now it's fine.

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