

EagleView's Software Measures Rooftops With Photos From the Sky

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By John Tozzi Dec. 8 (Bloomberg) -- Roofers once had to spend hours with ladders and tape measures to figure out the size of a job. Now they can get the precise dimensions of roofs -- the area of each section, the pitch, the length of ridges and eaves -- without leaving their desks.

In recent years, aerial and satellite photos have become abundant and detailed enough to show most U.S. buildings from several angles, and companies have emerged to turn those images into useful renderings. "It takes a lot of time to go out and measure a roof, so anything that will help with accuracy is a great idea," says James Kirby, an architect with the National Roofing Contractors Assn. EagleView Technologies was just awarded a U.S. patent on its method to derive roof measurements from aerial photos, an accomplishment that Chief Executive Officer Chris Barrow hopes will give the three-year-old Seattle company an edge over competitors such as RoofWalk, Pictometry, and Aerialogics.

EagleView patches together detailed roof renderings using aerial photos from public sources, such as county land records, or private databases. Its software matches up edges, colors, and shapes to create a three-dimensional image of the roof. EagleView's patent, previously granted abroad, will be issued Dec. 13, according to a notification from the U.S. Patent and Trademark Office. Barrow, 48, says the method is more precise and less cumbersome for roofers and insurance claims adjusters than the old-fashioned way. "It's very difficult to get an accurate measurement with a tape measure," he says. "Five [insurance] adjusters will give five different measurements."

Barrow says EagleView, which has 200 employees, counts most of the 25 largest U.S. insurance carriers as customers, and almost 20,000 contracting businesses have used the service. That's about one-fifth of the roofing contractor market, according to an estimate by market researcher IbisWorld. Barrow says EagleView is profitable on revenue of about \$40 million this year and expects to double that in 2012, as his sales team reaches more roofers and insurers.

Creating a Report

When a client puts an address into EagleView's website, the company pulls existing aerial photos of that property. The software uses them to generate a model of the roof surface, extrapolating measurements and slopes from images taken at different angles. Then a technician reviews the renderings and photos and e-mails the customer a report. The reports generally take one day and cost \$45, on average, though simple homes can be done for \$20 and complex roofs or commercial properties can cost \$80 or more.

The idea for EagleView came to software engineer Chris Pershing when his brother-in-law, roofer Dave Carlson, described how tricky it is to measure a roof by hand. Pershing, who had worked at Microsoft (MSFT) and other software companies, began trying to write a program to create 3D models from photographs, starting with a birdhouse on his kitchen table. They started the company early in 2008 and brought on Barrow, a veteran tech executive, a few months later to be CEO. They've since raised nearly \$8 million from angel investors.

The technology has helped reduce disputes between roofers, who have an incentive to high-ball roof dimensions to inflate estimates, and insurers, who have an interest in doing the opposite. "The size of the roof and the total number of squares is always a point of contention," says Corry Novosel, director of property claims at Westfield Insurance in Westfield Center, Ohio. (A "square" refers to 100 square feet of roof surface.)

Avoiding Ladders

Westfield uses EagleView mainly after big storms, tornadoes, or other catastrophic events that leave lots of roofs torn up and many insurance claims to be processed. Novosel says his adjusters can verify eight claims a day using the automated measurements, compared with five when they measure by hand. Many times, they don't even need to get on a ladder, if damage is visible from the ground. That reduces the risk that adjusters will get injured, a constant concern, Novosel notes, for people who clamber onto rooftops every day.

Joe Graham, a 28-year-old sales rep and estimator at Collis Roofing in Longwood, Fla., started using EagleView reports earlier this year for sales calls and estimates for people getting new roofs. He says he continued to measure by hand for several weeks, because he didn't trust the software. Now, Graham agrees that EagleView reports cut down on arguments with insurers, because "most insurance carriers at this point treat it as gospel." In the past, when he came up with a different number than an insurance adjuster, "I'd have to spend hours out there teaching them how to measure a roof," he says.

While he still has to climb up and inspect a roof to make an estimate, Graham says the EagleView measurements let him spend more time talking to customers and less time on top of their houses. It also makes his job easier. "It's great in the summertime in Florida," he says, "if you can save 15 minutes on a roof."

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