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Improving survey technology: laser measuring meets software

Have you ever observed an architect or a draftsman performing an existing building survey for a leasing plan or for as-built drawings? Did he use a tape measure or maybe a laser measuring device? What if he could magically transfer his measurements to drafting software, drawing the walls, doors and windows on a tablet as he takes measurements? This magically perfect data transfer would improve his accuracy dramatically, having totally eliminated the need to record the measurements on paper, only then to transcribe it again into the computer back at the office. How much time do you think this would save?

Laser measuring devices by themselves have brought a lot of improvements to existing building surveying. Allowing surveyors to not only measure without dragging a tape measure across the length of a room, but also let users easily measure where they can't reach: up high on walls to furniture or casework and vertically to capture ceiling or soffit heights. Also, laser measuring devices are far more accurate than those old sonic devices. Some handheld point-to-point laser measuring devices can measure more than 600 feet with an accuracy of about one-sixteenth of an inch. (Leica Disto D8) Unlike a 600-foot tape measure, laser measuring devices are light and fit comfortably in a user's hand.

Not only are measuring devices getting more powerful and accurate, but also they are getting more sophisticated with the progressive addition of new features. New models have tilt meters and



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are able to use trigonometry to internally triangulate measurements up a building while the surveyor takes indirect measurements standing well out from the building. Another new feature in some is a built-in targeting camera to help take precise measurements. They display the precise measurement target location on a color LCD display, ensuring an accurate measurement. This is especially beneficial in daylight when the laser can become hard to see with the human eye and a surveyor is trying to tag a parapet 500 feet up in the air.

But let's go back to this dream of magically transferring those measurements to drawings without having to write or type. Well this is exactly what we are now seeing emerge in the latest building survey technology. It started with the manufacturers of laser measuring devices putting Bluetooth capabilities in their high-end devices. These devices can pair with a computer and transfer dimensions directly to the drafting software at the push of a button, literally allowing a surveyor to draw the building accurately to scale based on the measurements sent wirelessly, direct from the laser measuring device. Pairing the software with 3D or building information modeling soft-

ware solutions can be particularly significant for property owners who work with a design professional capable of providing a BIM design approach. An affordable and accurate as-built 3D model can make BIM much more practical for remodel and tenant finish projects.

Advancement continues with the development of software solutions that expand field operability and further improve surveying speed. There are software enhancements designed to improve interface for surveying with top architectural software like AutoCAD and Revit as well as others that provide a specialized survey modeling software that works in a universal file type so the model can be imported into many different design software platforms.

One company reports users of its software solution measuring the same size building in as little as one-sixteenth the amount of time over using a tape measure and sketch pad. The same company claims that a surveyor can measure a 40,000-square-foot building in just one eight-hour work period (InfoQuest Technologies LLC). The time saving and accuracy improvements of these new survey solutions are hard to measure, but impossible to deny. But the real savings comes from the reduction of errors because, let's face it, the cost of a construction project coming to a screeching halt because the design doesn't fit, or a lawsuit filed over fraudulent rent numbers, is likely much more expensive than paying for a reliable survey in the first place.▲