



Navigating Success

Portland concrete contractor taps LN to upgrade its layout process



Company

Zavala Corporation
Portland, Oregon

Project

Aviva Apartments, a multi-story
apartment structure
Portland, Oregon

Topcon Solutions

Layout Navigator (LN); Total Station,
FC field computer tablet

Topcon Dealer

Topcon Solutions Stores
Portland, Oregon

Zavala Corporation specializes in structural and architectural concrete for commercial, heavy civil, and industrial construction projects throughout the Pacific Northwest. The firm does everything from foundations to shear walls to columns, and specializes in post-tensioned decks, reinforced decks and slabs, including all the reinforcement for PT decks, and more.

Virtually every aspect of Zavala Corp.'s concrete work involves layout of some kind, including establishing gridlines and other specific, design-related points. Until fairly recently, that facet of the job was tedious, laborious and far too prone to error. Fortunately for his crews, Hugo Zavala, the company's owner, was both aware of the issue — and a dedicated LinkedIn user."

"I use LinkedIn a lot and saw what some of my contacts there — people who do similar work to what we do — were using for their work and that really

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got my attention," he said. "After a bit more research, I reached out to the Portland branch of the Topcon Solutions Stores (TSS), to see what they could do for me."

To fully appreciate what an alternative technique "could do for him," it helps to know that the traditional method to establish gridlines and mark points is to use a 100' foot tape measure and a plumb bob. The biggest problem with that approach, according to Zavala, is a potential lack of accuracy.

"Imagine that we are working on a 200' dimension," he said. "Even with a steel blade measuring tape, that tape can stretch anywhere from two to three inches in the summer heat, the result of the person taking the measurement not knowing how much pressure to exert on the pull. With that much of a variance, it can get confusing as to where the mark actually should be. And if we are doing something like bolt layout for setting heavy columns, we can't afford to be off at all, let alone as much as three inches."

Today, Zavala's crews have an alternative that removes any of the risk of discrepancy described above. At the suggestion of the team at the Topcon Solution Store, the company purchased a Topcon 3D robotic instrument called a Layout Navigator and, according to Rolando Ruiz, Zavala's field superintendent, hasn't looked back since.

"The instrument — we currently operate a pair of LNs — has dramatically changed the way we do layout now," he said. "What used to be a two- or three-man job can now be done by one man alone and done far more accurately. The setup is very simple, the instrument is self-leveling, and we already had a comfort level with our FC field computers from use with a Topcon total station."

The LN is secured onto a pole-mounted prism / field computer setup, providing them with precise 3D positioning out to a working radius of 492 feet (130m). In addition to the easy one-button, self-leveling setup, additional benefits include seamless cloud-connected workflows with Autodesk and Bentley, all through the MAGNET software system of solutions.

Today, Zavala Corp. has four main crew members fully qualified to run their LNs, as well as another 10 that know how to run them post-setup. "That's made a huge difference in productivity," said Ruiz. "Layout would typically have meant as many as three people, maybe a long run of tape, and definitely a chance for error. That's all been eliminated."

The benefits run even deeper. In the past, said Ruiz, if vital information was missing from the initial design, they'd be forced to contact the designer or the engineer, which held up production.



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"Now, because we know the info in our data collector is directly from the CAD files that the engineer used to design the building, we are able to add in the missing data ourselves and continue along. No hold-up at all; that's saved us more than once."

"We are fortunate that Hugo is the kind of owner that he is," he added. "He's truly an innovator, always looking for the best solutions he can find to make our jobs better and easier. That's what prompted the initial move to the Topcon LNs and we are loving the improvements in workflow we've seen — it's made a real difference for us."

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