

Case Study:

Envision Construction Thinks the Industry is Broken — and They Know How to Fix It

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In an industry characterized by its entrenched traditions, Envision Construction is challenging the norm. Founded in 2022 with the goal to make construction practices more transparent, efficient and less wasteful, Envision has quickly emerged as a forward-thinking player in the southeast United States. A general contractor based in Georgia, Envision has placed cutting-edge technology at the heart of their approach, with FARO® Technologies 3D reality capture hardware and software taking center stage.

David Epps, Chief Technology Officer at Envision Construction, has over two decades of experience in the construction industry and has seen where projects go wrong.

"Envision is made-up folks who have 15, 20-plus years of experience from around the construction industry and hit their limit with the way things have always been done," Epps said. "Everyone was upset with the status quo of construction. So, now we're looking at it from the first principles mindset: How can we reapproach this very antiquated industry from a different perspective?"

Testing the FARO[®] Orbis™ Mobile Scanner

Epps was one of the first people to get his hands on the new FARO Orbis Mobile Scanner and he immediately began putting the device through its paces. As he trialed the Orbis in a number of different settings, Epps discovered a remarkable versatility to the solution, particularly in scenarios such as wooded settings, where terrestrial laser scanners often fall short. The ability of Orbis to navigate through complex geospatial environments with precision and speed Epps challenged his initial skepticism.

"When I first got Orbis I said, oh, they just painted the GeoSLAM blue. I didn't really expect a whole lot from it," he said. "But I started testing it and I was pleasantly surprised with how well it tracked through the woods. There were no flat surfaces whatsoever and it did surprisingly well."



One of the standout features Epps highlighted was the efficiency gains achieved with Orbis. Compared to traditional terrestrial laser scanning (TLS) methods, Epps found he could complete tasks in a fraction of the time with Orbis — for instance, scanning a three-story building that would have taken an entire day with TLS in a tenth of the time. This significant reduction in scanning time not only accelerated project timelines but also minimized the laborintensive registration processes associated with TLS.

With Orbis, Envision can scan a three-story building in **a tenth of the time** that it would have taken with a traditional terrestrial laser scanner.

However, Epps emphasized that Orbis was not intended to replace TLS entirely.

"The overall takeaway is that Orbis has a place in the digital toolbox. I don't think it's going to replace my TLS anytime soon for a lot of applications, but I would pick this thing up for several workflows where it makes sense — quick floor plans of buildings, areas outdoors, I think it can really do that type of job a lot quicker where the TLS is really overkill."



Instead, both Orbis and a TLS — like the FARO Focus Premium Laser Scanner — have their place as different tools in the Envision toolbox, with Orbis offering a swift and cost-effective option for specific applications. The seamless integration of FARO's tools into Envision's digital toolbox has allowed the company to address different project requirements with agility and precision, ensuring they remain ahead of the curve in an evolving industry landscape.



3D Tools From the Customer's Perspective

Beyond the technical advantages, Epps underscored the broader implications of embracing 3D reality capture technology. By investing in state-of-theart solutions, Envision has positioned itself as a trailblazing general contractor, attracting clients who value efficiency, accuracy, forward-thinking approaches — and most importantly, minimizing avoidable costs. The ability to provide clients with real-time insights, enhanced visualization, and reliable data has become a cornerstone of Envision's value proposition, setting them apart in a competitive market.

"At the end of the day," Epps said, "The customers don't care if you measure with a drone or a scanner. What they want to know is how it affects their bottom line. My response to them is that this device is a really fast tape measure. It's a very quick way for us to gather a lot of data that provides an unparalleled level of certainty and helps ensure that our quality levels are maintained."



Problem Avoider Instead of Problem Solver

Central to Envision's success is their unwavering commitment to efficiency. Epps highlighted how FARO's solutions empower Envision to preemptively address challenges, mitigate risks, and deliver superior outcomes for their clients. By adopting a proactive stance, Envision has transformed from being reactive solutions to leveraging technology to navigate complexities and uncertainties inherent in construction projects.

"Early in my career, I prided myself on being a problem solver," Epps said. "If there was an issue, I'd determine what tool we had to analyze the problem and hopefully provide a solution, but it was still very reactive. Over the years I've evolved from a problem solver into a problem avoider — because I have all these tools and I've watched the failures of the construction industry over and over again. Now, I know what's going to happen — so I ask myself, what can I do to get ahead of these issues? That's where using tools like Orbis help."



In addition to operational efficiencies, Envision's embrace of 3D reality capture technology has opened doors to new opportunities and expanded their service offerings. With plans to triple in size in the coming years, Envision is poised for rapid growth, fueled by a culture of innovation and a relentless pursuit of excellence.

A Virtual Rehearsal

One of the key insights Epps takes from working with 3D tech is its potential to simulate and refine construction workflows before breaking ground.

Epps articulated the unique challenges inherent in construction projects, where each one represents a one-of-a-kind endeavor — distinct from the repetitive assembly line processes seen in other industries. While industries like automotive manufacturing have mastered the art of the assembly line through repeated iterations, construction projects unfold in unique environments with varying conditions. Each job is different.

"In construction, we know that robots are not going to be doing our jobs tomorrow. That's not the future we're trying to implement, and it's not a reality," Epps said. "But if we can chip away at a percentage of waste here and there using the 3D tools, all of a sudden, that adds up to significant savings on a project — and that's huge."

Herein lies the power of 3D reality capture tools. By harnessing FARO's hardware and software, Envision can simulate entire projects digitally, effectively "building" structures twice — first on the computer and then in the field. This virtual rehearsal not only identifies potential challenges beforehand but also provides an opportunity to rectify issues in a costeffective manner, sparing costly rework on-site. As Epps aptly puts it, the ability to "make mistakes digitally" significantly mitigates risks and enhances project outcomes.

Sub-Contractor Accountability and Transparency

Moreover, Epps underscores the role of 3D reality capture tools in fostering accountability and transparency throughout the construction process. By leveraging tools like drones and progress management platforms, such as FARO Sphere® XG Digital Reality Platform, Envision can track progress, validate work quality, and hold subcontractors accountable for their deliverables. This newfound level of oversight not only instills a culture of excellence but also ensures





that projects are completed to the highest standards, meeting and exceeding client expectations.

Looking ahead, Epps sees a future where technology seamlessly integrates into everyday workflows, empowering every member of the construction team to use 3D tools with ease.



Even those who aren't 3D tech experts will be able to use mobile LiDAR scanners like Orbis for progress management and real-time quality checks.

"The SLAM algorithm has clearly evolved from the GeoSLAM days when I first started using it," Epps said. "Orbis closes the loop better now than the GeoSLAM did before. There's no need to do the figure-eight loops like you used to. The data's cleaner and better."

Envision Construction's partnership with FARO Technologies exemplifies the transformative potential of integrating cutting-edge solutions into traditional industries. By embracing innovation, challenging conventions, and leveraging technology to its fullest extent, Envision has not only elevated its own capabilities but also set a new standard for construction excellence. As pioneers in their field, Envision Construction and FARO Technologies are paving the way for a paradigm shift in how construction projects are executed, setting a precedent for others to follow suit.

"They say a third of every dollar is wasted on construction projects," Epps said. "Just due to material waste, miscommunication inefficiencies, and lack of coordination. If we can chip away at that 30% of waste, just think about how that has a ripple effect across the entire industry."

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