

Exploring Modern Solutions That Can Increase Worker Safety

Written by: Troy Dahlin, Vice President, Heavy Construction Segment, Leica Geosystems, part of Hexagon

HOW TECH CAN BOOST THE NO. 1 FACTOR ON ANY JOBSITE

In construction today, the most important part of the job isn't the project plans or even the equipment used. It's the ability of business owners to keep their team members safe.

It might seem contrarian, but companies must consider how they use new solutions to ensure safety in the context of the ongoing conversation about using technology such as drones, reality capture, and machine control on jobsites.

The industry is at a pivotal point. As the next generation of workers takes on leadership roles in companies, they have a different relationship with technology.

Undoubtedly, these changes have led to uncertainty, and those concerns have been borne out in recent research on industry sentiment. The latest data from The Civil Quarterly (TCQ) from Dodge Construction Network, produced in partnership with Infotech and Hexagon, revealed various factors contributing to feelings of uncertainty, including shortages of skilled workers and increased regulations.

Instead of letting fear of technology paralyze their path forward, the onus for construction companies is proactively initiating discussions on integrating technology into their professional lives.



Dangers of the Jobsite

Everyone on the jobsite has the power to effect change, and doing so first requires recognizing the facts. The jobsite is potentially dangerous, though not only in the ways many people think it is.

Centers for Disease Control and Prevention (CDC) data highlights an issue often overlooked in the industry: declining mental health and a high rate of suicides among construction workers. This sad trend severely threatens the industry, not to mention the companies directly impacted by such tragedies, as the suicide rate remains one of the highest among all industries.

According to the CDC's report in 2016, men in "construction and extraction occupations" experienced a suicide rate of 49.4 per 100,000. This rate is roughly double that of civilian working men aged between 16 and 64 years old in 32 states.

That rate amounted to 27.4 per 100,000 – three times the construction industry's fatal work-related injuries rate of 9.5 per 100,000 in 2018. Sadly, the official numbers may not fully capture the scope of the crisis, and the elevated suicide rate's exact cause is unknown.

While the CDC has recommended more research to understand why the rate is higher for construction workers, anecdotal evidence suggests that job strain, long work hours, and other "psychological risk factors," including depression and stress, may contribute to the rate. Even without additional research, construction business owners can take steps to mitigate those risk factors.

Workers in the industry often hold on to what has been passed down from one generation to the next. On the jobsite, that often translates into manual-driven processes.

Grading is the perfect example. Operators often say they can sense when they've properly completed their task.

However, they realize how much technology can enhance their operations as soon as they test it out and deploy it. Generally, they find it saves time and money, and it might reduce workers' stress because they know they're performing their jobs correctly the first time with the right tools and platforms.

According to TCQ, roughly half of civil contractors and engineers said they would allocate more resources toward recruitment to tackle concerns over the labor shortage. However, only a small proportion mentioned investing in technology.

The commitment starts even before the first shovel turns dirt.

Ensuring the team is working in the right place and performing the correct tasks can reduce discrepancies and errors, which result in rework and often cause companies to lose money on a project. Unnecessary rework increases the opportunity for mishaps, and technology can be a game-changer in improving safety.

Additionally, many people in the industry have historically started working without performing safety checks. These checks might include verifying and eliminating trip or fall hazards, machines missing safety guards, and equipment in need of maintenance.

Performing safety checks before excavation work might add an extra step, but it could save millions of dollars and countless lives.

Technology Doesn't Have to be Cumbersome

Technology has allowed companies to monitor everything that happens on a jobsite, providing them with valuable insights. However, for this information to be useful, it must be maintained in an easy-to-use and accessible format.

Collecting and analyzing safety data is the best use case for leveraging data to improve operations. Unfortunately, a recent report by Dodge found that companies are not making the most of data-driven safety. While larger companies are better at gathering safety data, not enough are utilizing technology to create a safer jobsite.

Wearable personal alert solutions combine personal alert and machine control technology. By integrating these systems, machine operators can receive visual and audible warnings directly on their in-cabin display.

In addition, pedestrians equipped with a tag can trigger a panic alert, which will notify machine operators or vehicle drivers nearby. This integration allows for less hardware in the cabin, making it easier for operators to focus and increase their overview of the construction site.

By adding collision avoidance technology to these solutions, workers can receive instant warnings of potential collisions, offering a simple, unobtrusive way to increase worker awareness and decrease onsite incidents.

It's About Investing in People

People are the driving force behind any successful organization, and investing in people should take priority.

Equipment and technology investments should be viewed through the lens of how they will benefit the team.


To maximize the benefits of technology, companies must select solutions that help them achieve their business objectives. Although implementing solutions to avoid mistakes and save money is important, companies should focus on their teams to achieve significant savings.

While this survey is specific to civil contractors, it is likely indicative of the entire construction industry. The increase in job security and attention to mental health since the COVID-19 pandemic may be the reason for this trend.

While the increased attention on mental health is a step in the right direction, more work is needed. While technology cannot eliminate all risks from jobsites or guarantee worker safety, it can make the jobsite safer by reducing some risks.

Companies should not be passive observers of industry changes. Instead, they should actively participate in them, or even lead the way.

Embracing technology sounds like a simple solution. Often, the solutions right in front of us can yield the biggest impact.

It is time for companies to embrace current technology and build a foundation for the future industry. In doing so, they make jobsites safer and better for everyone, and that's a goal everyone can support. 



About the Author

Troy Dahlin serves as the vice president for the heavy construction segment of [Leica Geosystems, part of Hexagon](#), in North America. He is responsible for the growth of the business through increased sales and market share. Prior to joining Hexagon, Dahlin served in senior leadership roles with construction firms in the Northwest United States where he oversaw business plans, staffing, budgets, financial reporting, negotiations, and other business management activities.

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