

Advanced Tech Addresses Concerns in Construction Industry

As the commercial construction industry evolves, so do the tools and equipment used to rake in new business and keep current customers satisfied. At the conclusion of 2018, USG Corporation and the U.S. Chamber of Commerce reflected on the changes in the sector over the course of four quarters, releasing its fourth quarter *Commercial Construction Index* survey before the holidays in collaboration with Dodge Data Analytics. Ongoing labor shortages and rising material costs still weigh heavily on construction at the start of the new year, but a potential solution is emerging in the form of advanced technology.

No matter if you're a general contractor (GC) or a trade contractor, finding skilled workers and accommodating high material costs impact a business' ability to hire, access financing and purchase the proper tools and equipment for a project. Finding workers with the necessary jobsite skills remained highly worrisome to more than half of the survey respondents in the fourth quarter, increasing over the prior quarter by 3%. However, analysts said this concern isn't new, having grown nearly 10% among contractors since quarter four of 2017. Coupled with the search for skilled workers was hiring expectations, which improved significantly in 2018's final quarter, the year's strongest reading of 60%.

Differing from prior surveys, the fourth quarter survey asked contractors about their use of advanced technologies onsite, if any, such as drones, equipment tagging, wearable technology, augmented and/or virtual reality, and automated equipment or robotics. Use varied between GCs, large firms and trade contractors, the former two taking a keen interest in tech adoption.

"The use of advanced technologies in commercial construction is expected to grow significantly in the next three years, with wider adoption of drones, equipment tagging and wearables on jobsites," the survey noted. "Use of advanced technology is driven primarily by general contractors and large firms.

Although nearly half of respondents said they are not currently using advanced tech onsite, only about a quarter anticipate they will still not use this tech in the next three years. About a third of respondents are currently utilizing drones, with 16% and 13% using equipment tagging and augmented and/or virtual reality, respectively. Talk of automated equipment or robotics seems ever-flowing, yet it was the least used tech at 5% in addition to 3-D printing.

Larger companies are more likely to embrace advanced tech compared to smaller companies. Furthermore, the benefits are outweighing the detriments, with many citing better labor productivity as well as improvements to schedule management, delivery on budget and safety.

Technology is also bringing more stability to contracts between GCs, subcontractors and material suppliers, said Chris Ring, of Secured Transaction Services (STS). To this day, Ring explained, "handshake agreements" remain the cornerstone of finalizing a contract. The construction industry is a "handshake" industry; however, in courts of law, disputes can't be resolved by solely a handshake.

For example, let's say a property owner wants to rehab a commercial property and needs 80 new windows as part of the scope of work. The entire general contract is documented and the GC hires a subcontractor and part of that subcontract is to purchase and install the windows. The subcontractor then orders the 80 windows from a material supplier. A month later, the owner then tells the GC that he needs 20 extra windows to make the lobby more appealing. The owner and GC shake hands but never amend the original contract.

At the end of the project, the GC submits a draw payment for 100 installed windows, but the owner only pays for the 80 windows spelled out in the original contract. The GC, not wanting to fight with the owner, only pays the subcontractor for 80 windows and the subcontractor only pays the material supplier for the 80 windows.

“Fast forward and the material supplier may file a mechanic’s lien for nonpayment of the 20 extra windows and then file suit to enforce the lien,” Ring said. “If the language of the purchase order for those 20 extra windows binds the seller to the original contract, the owner’s argument could be that they never authorized the GC for the extra 20 windows.”

The incorporation of digital technology allows material suppliers to “document the life of a construction project,” he said. Therefore, if the material supplier in the example then clarified the additional window order with an email or a digital contract, the likelihood of getting paid will increase.

“GCs, subcontractors and material suppliers should all look for ways to more easily and legally electronically document transactions on a construction project to avoid the pitfalls of ‘handshake agreements,’” Ring added.

—Andrew Michaels, editorial associate