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Three Ways Technology Is Changing How We Look at a Construction Site

BY MICHAEL MCLIN

Technology is helping the construction industry shed its image of being slow to integrate change. Smartphones and mobile apps have made communication and collaboration on construction projects much easier and, more importantly, are significantly increasing the speed of sharing information. BIM is improving project visualization, making scheduling more efficient and reducing waste and rework.

Here are three more examples of how workers are looking at construction sites differently than in the past.

Drones

The introduction of drones in the past decade has begun to change the way business is conducted in the construction industry, and is likely to continue escalating during the next 10 years. Companies have reported increased efficiency, helped in part by drones' ability to

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provide more accurate maps and data, allowing for a highly quantitative means of measuring progress versus schedule.

Increasingly, drones provide crucial surveying information, monitor project progress against more detailed digital designs and help create 3D models. Use of drones is also aiding in the management of previously expensive endeavors.

For example, in hard-to-reach places (e.g., the underside of a bridge), instead of paying expensive engineers to access the asset safely, relatively inexpensive drones can be flown down to capture images for inspection immediately. Doing so often costs up to three times less than managing the process manually.

Aerial inspection is another area in which drones are making their mark for surveying, site management and logistical planning. Footage captured by drones is even being used to forecast when jobs will be completed and can assist in easily displaying progress to clients.

These devices enable the surveillance of large-scale projects from remote locations so project managers and owners do not have to physically be onsite to maintain control of construction operations, thus making them a valuable investment for large-scale, high-dollar projects.

Although the legality of larger drones is somewhat uncertain, it's likely a matter of time before their use on project sites is a common occurrence.

Smart Helmets

Hard hats have been the quintessential symbol of construction workers for decades. Smart helmets are coming into their own and soon will become a mandatory piece of equipment.

They are equipped with a transparent visor, special lenses and 4D augmented reality to grant the wearer a heads-up display. Using sensors and cameras, smart helemets provide information about the surrounding environment and how to move through it, along with instructions on completing tasks and warnings of potential hazards.

These new additions certainly put a twist on an old mainstay, making it a much more comprehensive source of information. It will most certainly claim its place as a useful piece of personal protective equipment for years to come.

Virtual Reality

Construction sites are using 4D virtual reality models to fully immerse owners and other stakeholders during planning and design stages for major projects. Walking stakeholders through an interactive experience prior to finalizing plans allows them to produce plans that meet or exceed the client's expectations.

Electronic models allow work to be planned and executed in unique conditions. Virtual reality is becoming more mainstream and a requirement on an increasingly large number of projects. The 4D environments allow construction companies to plan every aspect of the project proactively and deliver a consistent and quality final product.

The construction technology that is developing is moving more quickly than the thinking, planning and legislation around its use.

But where there is uncertainty, progressive firms are identifying technology deployment as a golden opportunity.

The companies that take advantage of new technologies will most certainly have the competitive edge in this radically new environment. CE

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