

Pandemic Driving Documentation Technology Usage In Construction



Construction firms have made some progress in using technology to replace traditional practices recently but still continue to trail other industry sectors that have made technological adoption a top priority. Despite the fact that technology can reduce costs, keep project schedules on track, increase jobsite security and safety, those benefits still haven't appreciably moved the technological needle in this sector. The pandemic, however, could be the inflection point where the construction industry finally gets serious about technology, using the higher activity level in technology usage within the past several months as a good indicator.

For instance, progress documentation technology has been gaining more traction at jobsites since the pandemic hit this country. While documentation technology has been used more in recent years, the viral-induced pause has forced the industry to employ these tools more intensely and creatively. In the past several months, more jobsite cameras, drones and 3D laser scanners are being used at construction sites beyond their original intent, a trend that should continue in a post-pandemic environment. Here's why:

Jobsite Cameras

Since the arrival of the pandemic earlier this year, jobsite cameras have been one of the documentation technology tools used more frequently at building projects due to concerns over the spread of the virus by visiting often at dense project sites. Various types of cameras provide automated capture of images, videos and other types of data that allow users to view, manage and track project sites remotely.

For example, a 360-degree camera has become increasingly popular at jobsites, specifically during this pandemic. It's relatively inexpensive, portable, simple-to-use and provides critical details of the project site that other jobsite cameras shooting still photos can't capture, such as wider angles and often higher resolution. In essence, it gives clients and others more of a real-time viewing experience than other construction cameras. Think Google Street View for your jobsite, whenever and wherever you want. This 360-degree camera allows taking multiple images that are then stitched together to create a 360-degree photo, which offers a full perspective of a floor plan or precise details of the location of stored building materials. 360-degree recorded videos can be uploaded to a web-based platform and then easily accessed to anyone involved in a project.

One example is the use of a 360-degree camera on a stalled project because the owner wanted to document everything at the jobsite. The camera provided a detailed perspective of the project that would not have been possible with cameras taking still photos. Prior to the pandemic, 360-degree cameras were used mainly as a sort of "insurance policy" to document activity a jobsite or coordinate various trades on site for owner, project supervisors and others wanted to view it. Currently and in the future, 360-degree cameras will also be used to increase communication and collaboration on projects, making this technology an essential tool to further reduce time, costs and confusion in coordinating trades.

Drones

The use of drones at construction sites has been growing at a steady clip in recent years, providing data-rich content that can significantly lower costs and improve the efficiency and speed of various types of work

associated with building projects. According to one industry report, investment in this game-changing technology for construction is expected to grow to more than \$11 billion by 2021. In the construction business, drones are primarily used as a communications platform that details the progress of projects to owners, investors, subcontractors and others without having to physically visit sites and helps keeps projects on schedule.

Construction drone usage, however, has increased over the past several months, giving work crews the ability to easily document equipment and material inventory at project sites where work is at a standstill. This technology is perfect for a pandemic by limiting the need for humans to handle tasks that require on-site, in-person visits, thereby greatly reducing the risk of exposure to the virus. Other creative ways these tools have helped during this pandemic has been through virtual aerial inspections where a pilot on-site can inspect various scopes of work and broadcast the video feed over a Zoom meeting. This allows an inspector to remotely visualize and inspect the area of interest in real time, providing the pilot guidance and direction of what they need to focus on. Truly a game-changing and safe way to maintain the normal rhythms of a project through the use of technology already being used.

3Dimensional Laser Scanners

3D laser scanning, also referred to as reality capture, has proved extremely useful in the documentation of construction projects because of the highly accurate and detailed data they provide of every inch of a jobsite. Laser scanning captures data known as a "point cloud," or a database joining points in a 3D coordinate system. This technology is playing a critical role, not only pre-pandemic in helping project teams accurately document project conditions, but in the pandemic environment as well by providing a highly accurate digital record of the conditions of halted projects, information that will be needed when work begins again.

For example, laser scanning technology was used on a large-scale commercial project that was shut down due to the pandemic. This offered an extremely high level of accuracy and detail that captured the current state of the project. The scans provided a baseline that will show if anything at the site changed over a period of time, giving virtual data and images of the conditions that will allow making the construction or design changes while the project is in pause.

New innovations in construction cameras, drones and laser scanners have made it possible to quickly and easily gather and collect essential data on stalled projects in these challenging times. While all of these technologies are proving invaluable during the pandemic, it must be noted that technology itself cannot replace the human element of critical thinking to solve problems that arise in designing and building buildings. The future in using these tools, along with key project members embracing this technology, will be an exciting time, as it will undoubtedly revolutionize how construction is managed, documented, and delivered. And that is something this industry will be most grateful for in a post-pandemic world.

