5 Construction Technology Trends Powering Jobsites In 2022

The construction industry had a challenging but positive year in 2021, and the growth of construction technology has been one of the bright spots. With the pandemic forcing faster adoption of technological tools, experts and investors are recognizing the sector's increasing importance. The federal government is also providing an assist, with $100 million designated for Contech in the recently signed infrastructure act. "Construction technology is not a 'want' anymore. It's a 'need,'" said Matt Abeles, vice president of construction technology and innovation at Associated Builders and Contractors. So what can contractors expect in the construction technology space in the coming year? Here are five trends that construction pros should be keeping an eye on in 2022.

The Necessity of Good Data

Gathering data is one thing, but the way contractors utilize and share it across their organization is what will affect their success. Data is only as good as the action you can take with it. Anything that has to do with machine learning or AI starts with the ability to have data that allows you to teach the machine. A big part of the problem is "bad" data, or information that is in some way lacks accuracy or is misleading. According to Autodesk, bad data cost contractors globally $1.8 trillion in losses in 2020. Their study also revealed that bad data was responsible for 14% of avoidable rework, amounting to $88 billion in unnecessary costs. It’s possible that insurers will start paying attention to and rethinking the risk models, as well as how they assess and reward GCs that employ technologies the right way.

Robotics and Digital Visualizations

Another key future trend is the ability for contractors to visualize their projects and data while using that information to improve their work. The ability to see in a very visual industry is critical. Contractors are increasingly utilizing technology such as Building Information Modeling (BIM) and robots that allow them to get visual data without spending extensive amounts of time collecting it. For example, the use of time-saving and precise drones to help speed construction on large projects. If you're covering a very large area, like several hundred acres, that would take an enormous amount of time trying to cover the whole thing in that type of grid. However, utilizing a drone, within an hour you can achieve a much greater level of coverage. Better visualizations and robotics will enable workers to do their work better getting those smart people off their hands and knees and utilizing those incredible skills in other domains.

Large Investing into Construction Technology

This past year has seen rapid technological advancements on jobsites, largely in part due to necessity. Contractors were faced with various pandemic challenges that accelerated their adoption of new technology and working environments. Covid-19 pushed people to use technology out of necessity a little bit quicker. This focus is reflected in the growing wave of contech firms that have recently had successful investor rounds. Three years' worth of construction tech adoption got squeezed into the nine months post-pandemic because everyone was shifting to being offsite, socially distancing and virtual tools. If you see rising adoption numbers, new customers, more profitability, then that gives investors a good reason to want to invest in a sector. Five years ago, contractors were not investing, they were testing concepts. Today, you can see contractors are really

investing in venture capital as well. And that, as a result, has been a huge increase in the amount of money flowing into construction technology.

3D Printing

Commercial construction companies are exploring 3D printing as an alternative to traditional building components, particularly in areas where using traditional materials can lead to logistical problems. One example is the use of 3D-printed concrete blocks, fabricated on site. A machine that prints the blocks is also capable of going into tight spaces that would otherwise be hard to access. The technology, called "Printfrastructure," has proof-of-concept trials coming up this spring. With this focus on 3D-printing has come additional funding. This past September, the University of Idaho announced that it received a $4 million award from the National Science Foundation's EPSCoR Research Infrastructure Improvement Program to study recycled materials that can be used in 3D printing. It seeks to reuse refuse from construction, in particular wood, to create a material to 3D print modular floor, wall and roof panels. Contractors should keep an eye on this technology, as the potential applications for 3D printed construction are vast.

Employing Green Techniques

Environmental issues are a concern for all organizations, and as contractors try to figure out how to generate less waste on site and in the supply chain, there's incentive to do so from not only an ecological perspective, but also a financial one. In environmental issues, valuations are different and companies in carbon capture, for example, get valued very high, very quickly, when examining startups which focused on environmental methods. On Cemex's list of the top 50 construction technology startups, 14 of the featured companies focused on environmental areas. Environmental pressure will continue and will start increasing, especially on the building materials production side. More established construction companies are also focusing on waste reduction goals. For example, contractor Webcor diverted 90% of a California office project's waste from landfills and incinerators for a year in order to meet TRUE certification requirements. Alternative construction methods and materials, such as 3D printing and cross-laminated timber (CLT), can also enable cleaner building. Recently, Shawmut built a 75-foot-tall tower using CLT wood technology, which generates almost zero waste on site.

As the effects of climate change grow in intensity and priority, contractors have a growing range of technological tools to help them not only adapt, but also address the root causes of the issue and build greener from the start. For contractors, the message is catch up, or get left behind. The future has already begun.