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6 Trends Shaping Commercial Construction In 2019

Is it really a trend if something repeats year after year? This has become a valid concern in the commercial construction world. A world which exists in a competitive and fragmented industry that is frequently resistant to change. For example, the skilled labor shortage that has plagued the industry isn't going anywhere anytime soon, despite increased educational and outreach programs. Automation, drones and increasingly comprehensive technology solutions are infiltrating projects one jobsite at a time. Offsite building is becoming more and more prevalent to guard against worksite safety hazards and deliver projects faster, cheaper and more efficiently. Mitigating risk is still one of the most critical aspects of a successful job.

But for those trying to glean more information about what's around the corner to predicate ways it could affect the job safety and a healthy bottom lines, it's important to pay more attention to the nuances of these big trends. Below are six of the biggest trends to watch for in 2019.

Technology Supplementing Workers Rather Than Replacing Them
Autodesk CEO Andrew Anagnost encouraged attendees of Autodesk University to think about where automation can take the industry. He emphasized that automation will give professionals the opportunity to create better and more meaningful work by taking away redundant and repetitive tasks.

Automation increases the importance of industry expertise and creativity. But will automation take jobs away from construction workers? As long as 100% of the task cannot be automated, there will still be a need for human labor." Construction Robotics' semi-automated mason robot, for example, is designed to work alongside a human, as is its Material Unit Lift Enhancer. The company always starts by considering where someone is doing redundant work and could benefit from a machine taking the physical strain out of the work or increasing production speed.

Autodesk also shared its predictions about artificial intelligence (AI) and machine learning indicating that "AI and machine learning will be broadly applied in construction to reduce risk and improve project performance across the project lifecycle. "AI will also be applied to identify change risk and predict and prevent those changes earlier in the project lifecycle. In the year ahead, we will more regularly see AI and machine learning on the jobsite, and, as a result, more firms will realize its benefits to the construction workflow, saving companies time, money and, most importantly, increasing workers' safety." Robotics could supplement construction in numerous ways, including extending workers' careers by allowing a robot to perform more physically demanding tasks. It is also believed that robots will become more common in construction because they can draw younger technically savvy people into the industry.

Modular Construction Heights Continue to Increase

The modular construction market is expected to grow at a compound annual growth rate of 6.9% from $112.4 billion today to $157 billion by 2023. Buildings constructed through offsite, prefabricated modular units are stacking increasingly taller. Prescient, for example, topped its buildings out at five stories until 2015. Continual refinement of its technology, however, allows the company to now erect buildings up to 18 stories. Its average project square footage has similarly exploded, more than tripling from 60,000 square feet in 2015 to 200,000 square feet today.

Taller modular buildings are becoming more common. This willingness is being driven in part by a lack of skilled labor in the traditional construction sector, a lack of affordable housing, rising and unpredictable materials costs, and the constant pressure to deliver on time and on budget. Modular construction addresses many of these needs for the owner.

Design-Build's Increasing Popularity

"Design-build is no longer an 'alternative' delivery method," according to Preston Haskell, founder of Haskell Construction and co-founder of the Design-Build Institute of America. The method of contracting a single entity to both design and construct a project was a disruptive trend not long ago, but now, the "master builder" approach accounts for nearly half of all U.S. nonresidential spending.

All but three states have embraced design-build procurement and delivery for public projects and the last holdouts will surely soon follow. The popularity is based on results. Costs are less than more traditional methods such as a design-bid-build due to its streamlined organization and timelines are reduced due to less back-and-forth remedial efforts in the design process with clients receiving the clearest contractual remedies.

Massive infrastructure-based public-private partnerships rely on the method to establish a single point of responsibility, but the continued streamlining of design-build's efficiencies are allowing it to also be used on smaller and smaller projects as well. Design-build contracts are being used for transportation projects delivered for as low as $5 million in the same way they are for a commercial building project of that size.

Building Lean and Reducing All Forms of Waste

The U.S. economy is still recovering from the Great Recession and likely approaching another lesser downturn in 2019 or 2020, by some analysts' estimates. Under economic strains, it's more important for the construction industry to clamp down on inefficiency and improve productivity levels, which are second to last among all U.S. sectors, according to a McKinsey & Co. report. Contractors are increasingly looking to lean principles, which, along with automation, helped grow manufacturing's global labor productivity by 3.6% annually over the past two decades compared with construction's unimpressive 1% productivity growth, McKinsey found.

The philosophy is centered on eliminating waste in all the (sometimes unexpected) forms it can take for construction companies, from excess materials delivered to a project site to overlapping tasks in a workflow. Through early planning and frequent conversations with stakeholders, as well as a variety of lean tools and strategies, contractors can identify and eliminate efficiencies that might otherwise slip under the radar. Incorporating prefabricated materials and setting up just-in-time deliveries that align with project schedules are some approaches companies using lean building take to trim oversupply and over processing and to begin to make up for a chronic undersupply of skilled labor.

Drones Taking Off

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It wasn't so long ago that aerial photos of jobsites were taken from airplanes for a hefty fee. Since drones came onto the scene as an alternative, they've rapidly advanced to the point that contractors can access swaths of data with relatively affordable off-the-shelf models or third-party services.

Commercial drone use in construction surged 239% year over year, the fastest growth of any sector. As use of the technology expands, so do its roles. No longer just tools for capturing photos from above, drones and accompanying software are equipped with mapping, volumetrics analysis, thermal heat imaging and other capabilities sure to come.

Contractors depend on a steady stream of data to adapt their project plans and best target budget and timeline goals. Drone technology can help by gathering and analyzing information that human workers either couldn't collect or wouldn't notice. When linked to certain software programs, drones can measure the amount of dirt in a pile and give the contractor an idea of how many truckloads are needed, for example, or identify heat loss from a building so leaks can be addressed before rework is needed.

Meanwhile, the Federal Aviation Administration is slowly but surely breaking down barriers to commercial drone use, allowing more construction companies to explore their options for using the technology or even developing in-house capabilities. This year, the Low Altitude Authorization and Notification Capability(LAANC) opened 99% of U.S. airspace to drones and reduced flight approval times from about 90 days to just seconds. Rules for operating drones beyond line of sight, currently illegal for commercial users, seems to be the next deregulation on the docket as more drones take to the skies.

Gen Z growing up

Millennials will be ages 23 to 38 in 2019, which means that companies are coming to the end of the road with strategies to attract this cohort to careers in construction. The new focus for market researchers, recruiters and forecasters is Generation Z, born between 1995 and 2010 and ranging from ages 9 to 22. They are graduating high school by the millions each year, and the construction industry may appeal to them on many levels.

While millennials were raised in the "boom" times of the 1990s, Gen Z grew up in the aftermath of economic crashes in 2000 and 2008. They watched their entrepreneurial Generation X parents weather recession and are spooked by millennials' average $42,000 in debt. Gen Z's top concern is drowning in college loans, according to a study in *GenZ@Work,* with 75% responding that there are other alternatives for getting a good education. Based on what we know about this generation, construction companies would do well to attract Gen Zers with earn-as-you-learn programs and a clear path to career advancement. According to a recent Barna study, 66% of Gen Zers want to start a career before they turn 30 compared with only 51% of millennials. The industry would do even better to make the case for not just a career, but career success at a young age, and even the opportunity to own a small business. Fluent digital natives, Gen Z may be able to help construction firms innovate technologically more than their millennial predecessors could.