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What's next? PropTech, robotics & blockchain - by Nancy Greenwald

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Drones, which were considered “new” to the construction industry less than a decade ago are now commonly used on job sites to collect real time data about projects. The data collected helps improve progress tracking and helps catch problems early which can avoid unnecessary costs and delays. Investment in construction technology and related technologies continues to increase dramatically, year-over-year. Which of these will be commonly used in the next 3-5 years? PropTech, Robotics, and Blockchain are three technologies that cover a wide range of applications and that we expect will grow rapidly in use.

\$24 billion was invested by venture capital firms into Property Technology (PropTech) companies in 2020 alone. PropTech is an umbrella term used to define technologies that can make buildings and property transactions more efficient, improve security, and lower building maintenance and operational costs while enhancing the user experience. Some of these technologies utilize software, hardware, innovative construction materials, big data, automation, the Internet of Things (IoT), augmented reality, and virtual reality. Sensors that adjust the heat and lighting in a room when no one is present, cloud-based services for monitoring and adjusting indoor air quality, and AI-based systems for monitoring building security are just a few examples of PropTech. Hartford is becoming a hub for PropTech start-ups. Upward Labs, a PropTech venture capital firm and startup lab located in Hartford, has created a support ecosystem to fast-track the development of PropTech startups. Their third cohort of startups, which began in September 2020, is focused on technologies designed to address issues created by COVID-19.

Robots are being developed to provide a range of services on construction sites. Examples include brick-laying robots, drywall finishing robots, and robots designed to patrol construction sites and buildings to conduct inspections. Another New England company, Boston Dynamics, is a leader in the field, designing robots that automate routine inspections and capture data on construction projects. They have created a mobile robot called Spot that navigates terrain to automate routine

inspection tasks and data capture. Robots designed to assist in the construction process help to protect workers from a hazardous working environment, reduce workplace injuries, and address labor shortages. Autonomous equipment, like self-driving bulldozers and excavators are being developed to increase accuracy as well as to improve job safety. Robots can be controlled from mobile devices, managed from a central location that captures accurate project data while directing the process.

We typically think of Bitcoin when we hear the word blockchain mentioned, but the uses of blockchain technology are not limited to financial transactions. A transaction can be any event or step in a process. Blockchain is an integrative technology that aggregates data across multiple entities and across multiple software systems into a single, verified, immutable record available to all. Industries that are already using blockchain technology to increase the efficiency and reliability of transactions include mining, shipping, food safety, petrochemicals, energy utilities, insurance, and health care. Governmental agencies are exploring blockchain technology as a method for creating secure and immutable land records, for recording the chain of title to intellectual property, and even for tracking professional licensing records. There are multiple construction applications already in use.

Here are just two examples. Briq is a company employing blockchain technology to prevent the loss of data on the turnover from construction to operation and maintenance. DigiBuild is currently working in partnership with IBM to develop blockchain applications for the construction industry as a productivity tool, for supply chain management, and for payment management.

If the last year of disruption from COVID-19 has taught us anything, it is the value of new technologies in helping us solve practical problems. If you would like to learn more about “what’s next,” please join us for the Construction Institute’s 2021 Tech Trio Program Series. Learn more at [construction.org](https://www.construction.org).

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