



## TYPES OF CONSTRUCTION TECHNOLOGY

Construction technology encompasses a wide and ever expanding network of hardware, software, and cutting edge developments that make the construction industry run more smoothly. Over the past decade, adoption of technology in construction has become essential for companies who want to stay competitive in their field.

Software has become ubiquitous in the construction industry. In 2021, the majority of contractors used Procore, according to the [JBKnowledge](#) Construction Technology Report, and 97% of companies reported using construction-specific software on a daily basis.

Cloud software is becoming more popular in construction as it allows for collaboration and access to important files and images from any location. Sharing across teams is done easily in the cloud with little effort or risk, which makes it an ideal technology for construction pros.



Construction site cameras and security cameras are now integrating with today's most exciting technologies, like AI and popular software applications, to streamline large and complex projects.

Tech now plays an essential role in the construction industry, but this hasn't always been the case. Construction has been slower to adopt new technologies than other industries, but the usefulness of recent developments and the prospect of more futuristic products is finally turning the corner for construction tech adoption.

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## RECENT DEVELOPMENTS IN CONSTRUCTION TECHNOLOGY

Most of the technology being used in the construction industry today has been developed over the last 20 years, with widespread adoption of construction technology taking place even more recently, in the past five to ten years. 3D scanning, artificial intelligence, machine learning, and robotics have taken turns in the spotlight recently, with tried and true technologies, like site cameras, evolving rapidly to keep up with the newest developments in construction.



## Site Cameras and Construction Security Systems

Construction site cameras have become popular over the last 10 years for their time lapse imaging, remote monitoring, and security capabilities. Site camera features have expanded significantly since they first appeared on the market, and they're continuing to evolve in response to new technologies. Cloud-connected cameras with efficient and compact batteries, solar power capabilities, and high quality low light images would have seemed impossible 20 years ago. In recent years, site cameras have become more robust than ever, with advanced technologies like AI and machine learning taking remote monitoring to the next level.

## AI In Construction

Artificial intelligence has become one of the most anticipated technologies of the 21st century, and over the past few years the technology has evolved enough to offer some useful advantages in construction. While AI has a long way to go before it reaches the pinnacle of its potential, it has come a long way since its inception. In construction, AI can now analyze data, like images, in the blink of an eye and make decisions or issue warnings about safety, materials, project progress, and more. This is an exciting time to be in construction as the future seems to be unfolding right before our eyes.



## Software



The JBKnowledge Construction survey found that 48% of construction professionals will only adopt new software if it also offers an easy-to-use mobile application. One of the main benefits of mobile applications is their ability to be used anywhere, from any device. In the case of [cloud-based software](#), the same information can be displayed in real time across all devices to keep everyone on a project up-to-date. This technology is a huge step towards efficiency and productivity for large and small construction teams alike.

Hardware (i.e. a site camera) is only as good as its user interface. That's where most of the interaction with the product takes place, and that interface is a type of software. In construction, a good user interface must be easy to use and ready for collaboration without any unnecessary fluff. That means ease of use from any device, and without having to switch between applications to get the full picture. That's the goal, and recent developments in software, namely cloud computing and the Internet of Things, have made this possible.

However, rapid innovation in the industry has led to companies adopting new products that have yet to be integrated with each other. This is a challenge that companies like Sensera Systems are rising to provide solutions for through partnerships and integrations with widely used products, like [Procore](#).



## WHAT CONSTRUCTION PROFESSIONALS ARE SAYING

The growth of technology in the construction industry has completely changed the way projects are documented and completed. In the last two years, multiple surveys have shown the same trend - companies are adopting more technology than ever, and they're benefiting from it in more ways than one.

In 2019, 78% of contractors who responded to the [Dodge Commercial Construction Index](#) survey said they believed construction technology increased productivity, 75% said technology could improve schedules, and 79% said it enhanced safety. This response shows a clear trend toward high technology adoption and the importance of technology for competitive strategy.

According to the 2021 Associated Builders and Contractors [Tech Report](#), 78% of respondents said they've adopted a new construction-related

technology in the past two years, and among the 2021 ABC Excellence in Construction Award winners, 42% used site and progress monitoring solutions and 51% used drones. This sheds some light on what larger companies are doing to stay competitive.

In 2021, 45% of [Global Construction Survey](#) respondents said they recently adopted a remote monitoring technology, which allowed contractors and project managers to stay up-to-date on their construction sites from anywhere.

In the same survey, 50% of contractors said they are planning to invest heavily in construction technology in the coming year, and 33% of owners said they planned to do the same. This is good news for construction, as the adoption of technology is raising the productivity and safety ceilings in the industry.

## CHALLENGES OF ADOPTING CONSTRUCTION TECHNOLOGY



Technology adoption in the construction industry has been comparatively slow, which indicates that there might be some challenges to full adoption.

With any new technology that solves a problem in construction, unforeseen challenges may arise, like budget constraints, infrastructure challenges on site, training on new products, and integration of old and new technologies.

The lack of power and internet infrastructure on many construction sites was previously a significant obstacle to tech deployment. This problem has since been solved with solar power, efficient batteries, and mobile data. Now that construction companies are discovering the possibilities of solar and mobile technology, construction tech adoption is picking up.

Historically, a big challenge in construction has been communication and information sharing. Early in the technology revolution, the solution was simple, with the emergence of telephones and email making communication faster and easier. Today, those are no longer the most efficient methods of communication or collaborative sharing.

With that in mind, most companies are now making the move towards technologies like cloud based software and mobile devices to facilitate instant communication and collaboration from anywhere in the world. Whether that's instantly sharing project images as they're taken or live collaboration on a BIM project via tablet, these technologies make it possible to conduct high level collaboration with ease, and without tethering people to an office or job site. However, going from one technology to another in a short timespan has unique challenges for companies who have done things the same way for a long time.

The 2021 ABC Tech Report showed that 34% of contractors believe the number one challenge to using new technology is poor adoption overall. Poor employee cooperation or subcontractors who aren't familiar with the chosen technology can provide an obstacle to adopting and successfully implementing new tech.

In the same report, 17% of contractors said their number one challenge to technology adoption was that it was difficult to use, and 16% said it was a lack of integration with their existing technology. These findings support the idea that complete adoption of technology in the construction industry is going to depend on technology becoming easier to use and easier to integrate into existing systems.

Fortunately, this is something that construction technology companies are beginning to address, with more integration compatibility and higher standards for ease of use and intuitive software.



## THE FUTURE OF CONSTRUCTION TECHNOLOGY

Continuing growth of technology in the construction industry is a sure thing, which means existing technologies will continue to evolve while new technologies are likely to further revolutionize the construction industry.

AI in construction is going to become more widely used, and will likely become requisite in all site cameras on the market within a decade. It's in such high demand that technology companies are hard at work to provide AI solutions to common construction challenges, like safety, traffic control, and materials management. Right now, the usefulness of AI is just beginning to make itself apparent, and AI technology is still in a state of growth. The possibilities continue to expand every year, so new capabilities of AI in construction will be popping up consistently in the near future.

Even insurance companies are seeing the benefits of the rapid growth of construction technology. [AXA Insurance](#) recently said "new and emerging technologies are showing potential to reduce risk, improve productivity, and increase profitability on construction projects."

Having insurance companies support technology in construction has its benefits. Many construction companies are already profiting from the insurance breaks they get for deploying site cameras on their projects, and those savings are likely to continue to expand, which will encourage further tech adoption in the coming years.



The future of construction is likely to be defined by innovation and technological advancement, and it's not too soon to embrace it. Early adopters of advanced technologies like AI, machine learning, and cutting edge software can help shape the future of construction technology, and pave the way for tech-adoption stragglers. Using the most up-to-date technology to boost productivity and efficiency is an effective way to remain competitive in an industry that is rapidly changing.

## ABOUT SENSERA SYSTEMS

Simply put, Sensera Systems provides the most flexible, reliable, and affordable camera solutions in the industry.

Our professional solutions are purpose-built for the rigors of active jobsites, both large and small. Deployed on thousands of projects across North America, our solar/wireless solutions help protect stakeholders stay informed and remotely manage their LEM, logistics, risk, and safety from any location, in real time. Securely managed from a single platform, our solutions provide the most reliable and cost-effective real-time visual monitoring and documentation in the industry, all in a hassle-free package that is easy to setup and use within minutes.

For more information, visit [www.senserasytems.com](http://www.senserasytems.com)



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