

Key Construction Trends

Project Managers Need to Know

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It's a Pivotal, yet Promising Time in the Construction Industry

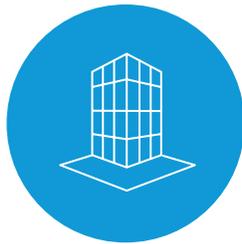
According to Research and Markets, “The global construction industry is projected to reach \$10.5 trillion in 2023, up from \$7.4 trillion in 2010.”¹

Forecasted to grow by “3.6% GDP in 2018 by Turner and Townsend,” there’s plenty of opportunity in the construction industry.² To take advantage of this growth, it’s imperative to stay on top of the trends being driven by the proliferation of technology, an evolving workforce, and lean construction.

TOP 10 TRENDS

Shaping Construction Project Management

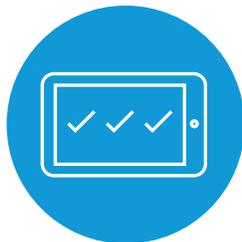
1. Building Information Modeling (BIM) Evolution



With BIM, architecture, engineering, and construction (AEC) professionals have access to intelligent 3D model-based processes, giving them the insights and tools to efficiently plan, design, construct, and manage buildings and infrastructure. The next evolution of BIM will need to deliver a purpose-built approach that makes it possible to coordinate and optimize the entire design, build, and operate processes. This will deliver predictability from information and data foresight, efficiency, and seamless coordination.

This not only enables 3D and 4D (time) programming, but also 5D, 6D, 7D and 8D for problem-solving, improving as-built operation, sustainability, and safety. In fact, “78% of manufacturers believe BIM is the future of project information.”³

2. Project Management Software



When it comes to project management software, it's all about real-time team collaboration to optimize performance on construction projects. From the project manager and the engineer to the superintendent and subcontractors, working in real-time means more efficiency, transparency, and accountability in construction.

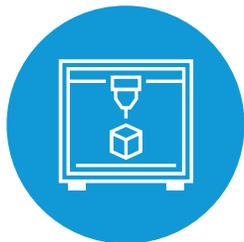
In an industry where “95% of data is thrown away or not collected at all, project management software enables data-driven decision making which can help prevent budget overruns (80%) and low efficiency rates (30%).”³ It also improves job costing, scheduling, and payments.



3. Robotic Technology

When it comes to repetitive tasks, robotics can improve productivity by up to 10 times in the building process. Using self-driven vehicles or masonry construction, robots can lead to faster, cheaper, and safer ways to work on site.

Although robotic technology has a long way to go, it's expected that there will be a "1.8x increase in industrial robot shipments in the next four years."³



4. 3D Printing

Now present in retail, aviation, and healthcare spheres, 3D printing is predicted to expand into the construction industry. Although cost-prohibitive in the past, researchers have been refining techniques for 3D printing, or additive manufacturing, in construction. By definition, 3D printing refers to "the production of physical objects layer-by-layer by an automated and usually computer-controlled machine."⁴

With its flexibility of suitable materials, freedom of design, and the ability to create complex design fabrications, this technology could transform the construction industry. Before it can truly take off, the technology needs to be embraced by the industry.

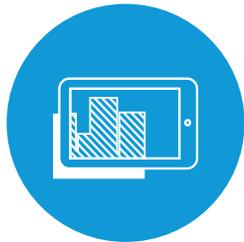




5. Virtual Reality

Imagine taking a virtual walk through a building site, such as a new office space or a high-rise apartment complex. Virtual reality (VR) would allow you to experience the architecture like nothing before. In the construction industry, VR allows builders to pitch architectural ideas to their clients before any investment is made, mitigating risk and boosting sales.

Beyond architecture and design, this technology also improves safety. Through simulation, workers are trained on how to safely operate machinery, enhancing productivity and efficiency. What better place for VR than construction?

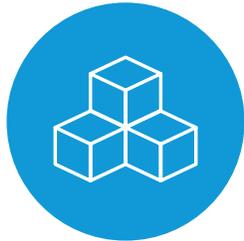


6. Augmented and Mixed Reality

Sure, virtual reality gets all the buzz, but augmented reality (AR) and mixed reality (MR) seem to offer more benefits for those who work in the construction industry. As construction becomes more data-focused, AR enhances what we see through data and information. Not only can you visualize the real world, but now you can add to it. For construction firms investing in BIM, mixed reality is a logical next step. Mixed reality is a technology that merges virtual reality and the real world through immersive technology, allowing you to see the real environment overlaid with holographic data from a 3D model.

In fact, both AR and MR are considered a revolutionary trend in construction because they allow builders to project and plot their sites before they ever break ground. Ultimately, augmented reality provides more accurate measurements and material details, while reducing the risk of errors.

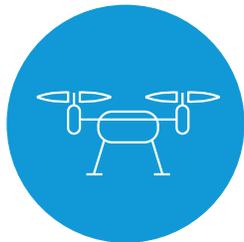




7. Modular Construction

Known as prefabricated building units, modular construction is built off-site in about half the time and then delivered to the intended site without compromising quality. The most common types of modular buildings are construction camps, classrooms, military housing, and industrial facilities. Often used in remote or rural areas where conventional construction isn't practical, modular construction provides a fast, affordable way to set up a temporary building.

In some cases, modular construction can get the job done 65 times faster.⁵ Thanks to the cost and time savings, this trend is expanding into the development of modular homes and buildings, making homes and businesses more affordable for everyone.



8. Drones

In construction, drones provide numerous advantages. Most often used in mapping a construction site, drones utilize aerial surveys to collect data and evaluate a given jobsite. This saves businesses the time and expense associated with land surveyors doing it by foot.

Most importantly, drones allow construction companies to monitor and inspect jobsites, report project updates, and track any disruptions. This rapidly advancing technology provides more accuracy and precision data and images than ever before. According to Goldman Sachs' estimates, the drone industry is expected to grow to \$11.2 billion in 2021.





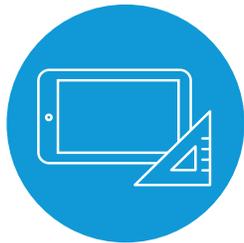
9. Evolving Workforce



As technology evolves, the workforce will evolve. Not only will we see the influx of the millennial generation, who may be more tech-savvy contractors, but we'll also see the exit of many baby boomers who may take valuable intellectual property with them. To ensure the continuity of processes and field intelligence, there will be a need to pass along this information and intelligence through training, data, and technology. When you consider the proliferation of mobile usage, artificial intelligence (AI), machine learning (ML), and the Internet of Things (IoT), technology stored in the cloud makes it possible for teams to access this information at lower costs anytime, anywhere—streamlining the transition between generations.

To stay competitive, construction companies will need to adopt these technologies—and hire workers who are technologically savvy enough to run project management software that allows their teams to work in synchronicity by leveraging these technologies. In 2018, the U.S. Bureau of Labor Statistics reported, “there were nearly 200,000 construction jobs unfulfilled.”³ Of course, along with a smarter workforce, robots will need to fill these gaps.

10. Lean Construction



In an industry where budgets, timeframes, and safety are all critical, lean construction is growing in demand. The goal? To maximize value for the customer while minimizing waste.

To meet this demand, all stakeholders—including the owner, architect, engineer, general contractor, project manager, subcontractors, and suppliers—will need to work together to eliminate any unnecessary labor, equipment, or materials. Lean construction minimizes waste from defects, overproduction, inventory, underutilized talent, or over processing. A smart way to ensure the continuous, uninterrupted workflow of lean construction is through a project management solution that allows clear communication and collaboration between all parties. This keeps the project moving forward on time and on budget, making everyone happy.



How Will These Trends Affect Your Day-to-Day Work?

When it comes to your day-to-day job, some of these emerging trends may affect you more than others. The important thing is to be able to recognize which ones might most impact your job, so you can be better prepared. For example, with BIM you may want to leverage a solution that allows you to optimize the entire design, build, and operate process for better predictability through data foresight, efficiency, and coordination. Depending on how tech-savvy your company is, trends like robotics, 3D printing, VR/AR/MR, and drones may be something to be aware of, but not necessarily something that affects your everyday responsibilities.

A few trends that may be more relevant to your line of work are evolving workforces and modular or lean construction. With the evolving workforce, it may be something you keep in mind when hiring new employees. As for modular or lean construction, this may be something you work into specific projects for cost savings or green development. In terms of more urgency, one trend you can take advantage of right away is finding a modern project management solution. Whichever solution you choose, you'll want one that offers real-time team collaboration on your construction projects for more efficiency, transparency, and accountability. But how do you ensure you're choosing the right project management solution to meet all of your needs?





Streamline the Project Management Solution Selection Process

Selecting the right project management solution for your construction company is no easy feat. There are so many things to consider—like costs, capabilities, and compatibility. It can feel overwhelming, but what if you could find a solution that allowed you to better plan, design, budget, and construct your projects?

Create a Must-Have Checklist

In order to streamline the project management solution selection process, start with a list of must-haves and some nice-to-haves. Obviously, making an investment of this size means you want to make sure you're choosing a project management solution that improves your overall work processes and will give you a solid return on your investment. To make sure you choose the best solution for your company, ask yourself the following questions.

7 Questions to Ask Before You Buy

1. Can it grow with your team?

Whether you work in a small company or a giant enterprise, you want a project management solution that can scale with you. Many software vendors require you to buy individual licenses, while others let you pay a fee for an unlimited number of users. Be sure your investment is scalable.

2. Does it offer real-time collaboration?

When it comes to project management on a construction site, real-time collaboration is key. With so many workers, locations, and details, it's easy to lose track of the latest plan sets and documentation. To stay on time and on budget, it's important to have everyone working in perfect harmony.

3. Does it have an intuitive interface that's easy to use?

There's always a learning curve when you introduce new software and tools. Before you buy, think about your workers' skill sets and try to choose a solution that offers the features you need, but is easy enough to use so employees can get up to speed quickly.



4. Does it provide the tools you need? Is it in your budget?

This is a no-brainer, but sometimes you don't know what you need until you know what's being offered. If the solution offers a free trial, give it a try. It's a smart way to determine if it meets your needs before you sign on the dotted line.

5. Can you import your Excel data?

One of the biggest challenges of implementing a new project management software is the fear that you'll lose valuable data. You want a solution that allows you to easily import your most recent data from Excel. That way, you're not wasting valuable time and energy re-entering information.

6. Does it offer secure cloud hosting?

As cloud-based software becomes mainstream, you'll want to choose a project management solution that offers secure cloud hosting for valuable data. You also want all of your team members—from the field to the office—to be able to access their projects and tasks anywhere, anytime on mobile or laptop.

7. Will it streamline disparate data and apps?

So much data, so little time. If you're currently managing projects across several mobile apps, you know how hard it is to keep track of the latest project plans. You'll want to choose a project management solution that allows your entire team to collaborate in real-time, from a single source of truth, so everyone is working in synchronicity.

Whichever project management solution you choose, make sure you choose a reputable company that's been around awhile. You want your investment to give you a strong return, from a company you can trust.





Discover Real-Time Collaboration from the Field to the Office

If you struggle to keep track of the latest project designs, documentation, and data across random mobile apps, you're not alone. "The unfortunate fallout from the recent explosion of mobile apps for construction has been the creation of **data silos**," said Marcel Broekmaat, *Segment Manager of Trimble's General Contractor/Construction Management Division*.



Today, many contractors are reporting that disparate workflows and communication gaps between teams are creating huge inefficiencies and costly rework, where project managers no longer feel like they have control over projects. With Trimble ProjectSight, we are breaking down those silos by providing a centralized workflow that's easy for all field teams to access, update, and share critical project data."⁶

With ProjectSight, Your Team Can Work in Perfect Harmony

Designed to overcome the challenges of disparate data, ProjectSight is a complete web and mobile project management tool that empowers your team to access and share the same information—in real time—so everyone is working in perfect harmony. Marrying both 2D and 3D BIM-based designs, ProjectSight creates a single source of project data, RFIs, issues, submittals, and work orders that are all captured, managed, and tracked in one easy-to-use system.

With over 25 years of history in building construction, Trimble brings its experience and expertise to life through ProjectSight. This secure, cloud-based solution allows your team to work anywhere, anytime, improving overall project efficiencies.



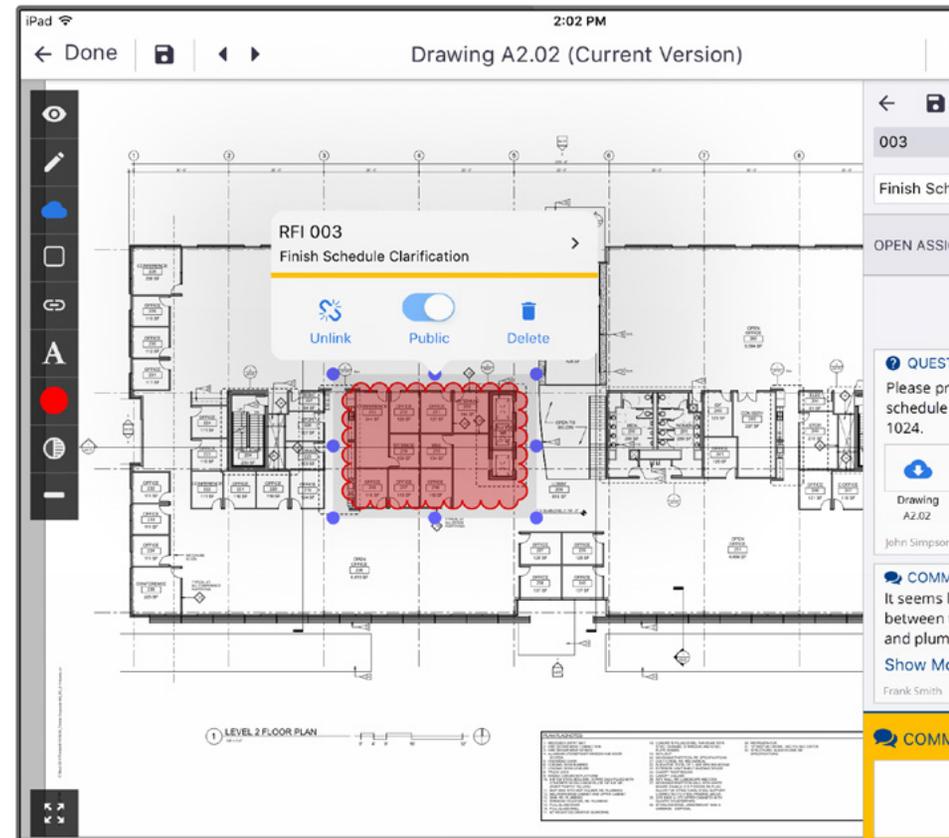
Gain Next-Generation Features to Streamline Project Workflows

Collaborate through Team Conversations

With ProjectSight, team members can collaborate and converse in real time, providing full transparency around project decision making. Each conversation appears alongside drawings and models for easy reference. Think of it like text messaging only better because it provides full project traceability and history, so there's no second-guessing.

Share Feedback and Annotate in Context

One of the biggest challenges in project management software is tracking feedback and changes without context. With ProjectSight, contributors can comment directly on the official project documentation. This means users can mark up both 2D drawings and 3D BIM files, so annotations can be linked to any asset, putting data in clear context.



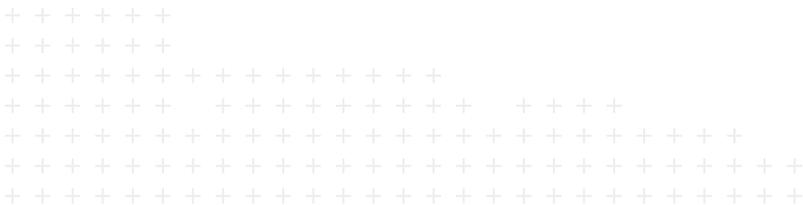


Work with 3D Models on One Screen

Powered by Trimble Connect, ProjectSight enables you to interact with BIM within the app. This allows you to see architectural, structural, mechanical, electrical, and plumbing designs on one screen in a complete, constructible model, so you can identify and solve potential issues before they become full-blown problems.

Get a Secure, Easy-to-Use Solution

ProjectSight is a secure web and mobile project management tool that integrates seamlessly with a wide array of drawing and BIM solutions. Plus, it's easy to learn and use, requiring minimal training time. To get up to speed quickly, Trimble offers videos where you can get fast answers to key questions, and keep projects moving.





Give Your Team the Project Management Tool They Need

With ProjectSight, everyone on your team—from the field to the office—can work in concert, streamlining project management for enhanced workflows, project completion, budget, and timing. Here's how:

Project Managers

With ProjectSight, project managers can see the big picture, streamline construction project details and plans, and improve workflow efficiencies.

Superintendent

First on the job and the last to leave, superintendents can streamline their problem-solving and decision-making with ProjectSight.

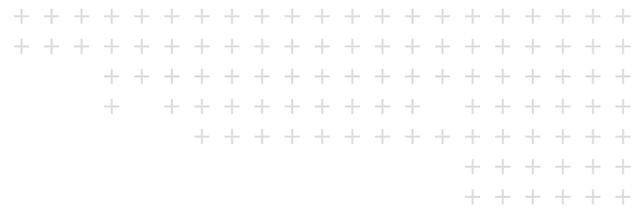
Project Engineer

With ProjectSight, project engineers gain peace-of-mind, knowing everyone's working from the same 3D models and drawings.

Subcontractor

Rather than chasing down the latest plans or RFIs, project managers have the most up-to-date information at their fingertips with ProjectSight.

See for Yourself Why ProjectSight Makes Perfect Sense



If you're looking for a next-generation project management solution where everyone on your team—from superintendents, engineers, project managers, and subcontractors—can work in synchronicity, give Trimble ProjectSight a try.

We think you'll agree, whether you're working online or offline, in the office or in the field, ProjectSight will help you break down the data silos, so you can get the job done on time, on budget, and in scope.

Want More Information?

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