CONTRACTOR HPAC Engineering

FAQ

HOW CAN COLLABORATIVE TECHNOLOGIES HELP ME ON MY NEXT CONSTRUCTION PROJECT?

Are collaborative technologies helpful for contractors?

Yes — every day, collaborative construction management systems are accelerating project delivery and helping contractors work more efficiently while minimizing the risks they face. Having a centralized system that connects the design and construction teams to the accurate, up-to-date data they need throughout the lifecycle of the project not only fosters communication, but it also helps identify potential problems and eliminate mistakes, thus potentially increasing profitability.

In traditional construction projects, encountering problems in the field can result in weeks of downtime for contractors as engineers and designers work out a solution. With collaborative technologies, conflicts between systems can be identified in pre-construction meetings, and if problems arise in the construction phase, they can be resolved quickly; in many cases, the trades can get their call to action in the same day the problem is identified.

A construction management system must be “the single source of truth” to work most effectively. Everyone accessing the data must be sure they are obtaining the same information that everyone else is using. The best systems ensure that the entire construction project team is working from the correct version of documents and plans, ideally providing access to all of the data at any time from any location.

What types of collaborative technologies are out there, and what do they do?

There are several types of collaborative technologies, from the most basic to automated, cloud-based construction management software specifically tailored for the needs of contractors and construction project teams, such as Autodesk BIM 360.

With traditional construction methods, information was often lost between the architect and the contractors and the trades installing the equipment. Contractors often did not get the design data they desired or got it too late in the game to optimize efficiency. Collaborative technology encourages a bridge between design and construction and maintains it through the lifecycle of the project. Many contractors prefer to use this software because they have direct access to what the design team is looking at, and it encourages communication between all members of the project team.

In earlier versions of collaborative systems, such as FTP sites, parties downloading files or sharing them via email could easily find themselves working from outdated versions of project documents. In optimal collaborative systems, a shared database of project information resides within the ecosystem, and all stakeholders can access the data anywhere, anytime. Automated systems can record activities at the site, provide visibility for any possible risks associated with the project, and alert responsible parties when a problem arises. This poses numerous benefits for contractors.

First, as soon as there is an issue, everyone who needs to know is up-to-date and can begin dealing with it before people arrive at the site, thus minimizing downtime and eliminating wasted trips. Issues in the field can be resolved swiftly—or better yet, identified before they occur. Potential problems are often identified using collaborative technologies in coordination meetings, which make them much more efficient and productive than they used to be. Technology also ensures installation errors and punch list items get documented and the appropriate parties are notified. All of the information and associated activities are tracked.

Numbers and metrics come to life to spot problems and identify root causes. Optimal technologies can identify risks—safety issues, added costs, schedule delays—and make trends visible in easily digestible reports with bar graphs and pie charts. As soon as changes are recorded, metrics are updated. Reports are automatically sent to key people, keeping them up to date on how they are performing.

The model can even be taken to the site to ensure accuracy. For example, BIM 360 tools interface with Robotic Total Station equipment, which tracks a participant's location on the site to let them know where they should drop a pin for items including forms for concrete, hangers for ductwork, and penetrations through walls, for example.

How do collaborative technologies impact costs?

Initial costs for construction management software typically include a license fee for each user. Most implementation experts also recommend services that provide guidance, planning, training, and consulting to ensure new users get off on the right foot.

If properly implemented, collaborative technology can provide an immediate return on investment by making processes more efficient and ensuring quality workmanship. Contractors who have successfully implemented the technology realize savings by increasing productivity and staying on schedule. The technology can also help eliminate the time wasted uploading and downloading data; the amount of time employees' spend waiting for items to download is commonly overlooked. The added benefits that come with identifying problems, preventing mistakes and minimizing downtime can have an even greater effect on the bottom line. The costs associated with having a crew waiting two weeks to finish a project can be substantial, as can the cost of protracted litigation in the event of a dispute.

Risks in a construction project include quality, safety, cost, and schedule which tie back to the contractor's reputation, and a contractor lives and dies by his reputation. If these risks can be made visible in almost real time, contractors can identify problems and avoid them or mitigate them promptly.

What types of data do I need to share, and is the data safe?

Users are strongly encouraged to share any data or documents that will lead to a more successful project outcome, including shop drawings, conforming drawings, 3D models, and checklists to ensure quality and safety compliance. Files will include updated data from the design team, daily communications, and reports, as well as any observations made on the site.

Individual users have control over the information they share, and no intellectual property, trade secrets or financial records need to be recorded. Rigorous standards ensure the security of the data. Only individuals with permission can access the files, and all comments are recorded and archived. Every user is credentialed, and the system should identify when and where they log on. That data is a permanent part of the project record and there is no way it can be erased. The synchronized information is permanent, up to date and accurate, minimizing the risk of outdated versions or multiple versions of files are in use at one time.

These benefits of collaborative technology can continue after the project is completed. The data matures and grows as the project continues, producing not only more accurate records and as-built models, but valuable information that can be readily accessed and used by the owner, including warranty information and maintenance schedules, which can be controlled automatically. Work orders are issued to the party designated to handle them, complete with model numbers.

Periodic maintenance can be necessary to maintain the warranty on the roof or HVAC system, and making sure warranties are up to date can help to ensure customer satisfaction, increase opportunities for contractors to remain involved over the life of the project, and maintain their reputation.

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