

COMPANY

Balfour Beatty Construction

LOCATION

Dallas, Texas, United States

SOFTWARE

Autodesk® BIM 360™ Field

Deploying field management

Balfour Beatty Construction takes field management to the point of construction with Autodesk BIM 360 Field

A big advantage of BIM 360 Field is that it helped us shave time from the overall project schedule. This can lead directly to more savings through a reduction of general conditions and overhead.

—**Nathan Ducote**
Project Manager
Balfour Beatty Construction



Image courtesy of Balfour Beatty Construction.

Project summary

A leader in the commercial construction industry in the United States, Balfour Beatty Construction provides general contracting, at-risk construction management, and design-build services through more than 2,400 professionals nationwide. Balfour Beatty, known for embracing innovation and collaboration, decided to initiate a multiproject pilot of Autodesk® BIM 360™ Field, a cloud-based field management service. BIM 360 Field takes project management workflows, such as quality assurance (QA)/quality control (QC), commissioning, punchlists, and more, to the point of construction on mobile devices. Due to the success of the pilot, Balfour Beatty decided to approve BIM 360 Field for use on all its U.S.-based projects. Since turning to BIM 360 Field, Balfour Beatty has been able to:

- Minimize the time spent documenting issues, such as punchlist items
- Help streamline processes to better support tight project schedules
- Standardize checklists and QC plans for projects
- Enhance commissioning and handover processes

The challenge

The number and types of technologies available to construction firms have never been greater, with Apple® iPad® mobile devices, cloud computing, and BIM (Building Information Modeling) all creating new value in design and construction delivery. Balfour Beatty decided to explore mobile field management technologies, including Autodesk BIM 360 Field. The firm's information technology (IT) and operations teams identified the desired capabilities of a mobile field management solution, including support for standardized operating procedures and cross-company visibility into quality and safety.

Kasey Bevans, Balfour Beatty Construction's chief information officer, says, "It is our job in IT to help operations through a rational process for choosing the best technologies that can help our business. We worked with multiple projects, evaluated multiple vendors, and ultimately selected BIM 360 Field due to its ease of use, enterprise feature set, and overall services and support."

Construction leader saves time and money with Autodesk BIM 360 Field

The solution

Autodesk BIM 360 Field is a cloud-based service that combines mobile field technologies with cloud-based software for collaboration. BIM 360 Field delivers an all-in-one mobile field management service. Its features include project-based document libraries and checklists for QA/QC, safety, and commissioning along with issue creation/sign-off and tracking capabilities. Using BIM 360 Field, construction firms like Balfour Beatty can replace traditional paper-based methods for managing quality, safety, commissioning, and handover with more standardized field management that goes right to the point of construction. Cloud-based collaboration gives firm leaders greater visibility into field status across processes.

After piloting BIM 360 Field on several projects, Balfour Beatty came to believe that the benefits of field management went beyond individual projects. "We saw during our pilot that field management helps give us new insight into how we run our business across projects," says Sean DeMartino, division president. "Our company's success is tied to our ability to manage costs, schedules, quality, and safety on all of our projects. We have strong systems in place to manage cost and schedule. With support from BIM 360 Field, we can get real-time access to the quality and safety aspects of our performance across projects and subcontractors. This improves our efficiency, and helps us provide a better end product to our clients."

Going mobile

The falling cost of hardware has changed the equation for using mobile devices in construction. The low cost, long battery life, and ease of use of today's mobile devices, such as Apple iPad devices, make them a natural fit for construction. Coupled

with durable field cases, mobile technology is standing up to the rough conditions of the job site. This is how it works for Balfour Beatty: Field personnel use iPads to connect to the Internet and upload and download information, such as punchlists, checklists, and equipment status. They can more quickly record issues and share them with the correct people, helping to save significant time.

"iPads with BIM 360 Field form a perfect platform for what we are accomplishing," says DeMartino. "Both are intuitive and simple to use. The iPads we've used are durable and we've had zero issues with damaged devices. We use OtterBox Defender Series cases and carry straps. This combination is a must because by having iPads sling worn, it doesn't tie up your hands when climbing ladders or entering enclosed spaces."

Connecting through the cloud

In addition to iPads, another technology contributed to Balfour Beatty's decision to adopt field management: cloud computing. Autodesk BIM 360 Field is offered as software as a service (SaaS). Autodesk operates the servers needed to run the software as a cloud-based service, which means that Balfour Beatty doesn't need to worry about hardware infrastructure or maintenance.

According to Jason Bentley, director of IT for Balfour Beatty, "We have other cloud-based systems currently in place, so this wasn't the first time we had decided to leverage technology like this. At the end of the day, running BIM 360 Field in the cloud helped reduce our costs in servers and scales to better meet the needs of our large company. Putting servers in racks and managing them are things we don't need to worry about with cloud-based services."

Agile field management

The fact that Autodesk BIM 360 Field helped the firm to take BIM into the field contributed to the decision to implement it across the company. With BIM software, such as Autodesk® Revit® software products for design or Autodesk® Navisworks® Manage software for coordination, project teams can explore intelligent, 3D models of projects before construction begins. BIM can lead to a number of benefits over the course of a project. Take coordination as an example: By coordinating using a 3D model, many firms find that they can more easily identify and address clashes, which can lead to a reduction in requests for information (RFIs).

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BIM 360 Field enables end users to leverage BIM objects and attributes, such as equipment type and manufacturer, and workflows, such as commissioning. Data passes from the model to the point of construction and back again, updating the building model dynamically as work and operations progress. Bentley explains how the service is helping Balfour Beatty, "BIM 360 Field complements our BIM investments by helping to extend the value of BIM beyond coordination into the construction and on-site operations of our projects."

The result

From issue documentation and tracking to QA/QC, commissioning, and safety, BIM 360 Field has made a huge impact on Balfour Beatty's field management processes. The results of using BIM 360 Field really hit home for the people evaluating the results of the pilots, especially when looking at the potential savings in time and cost.

"A big advantage of BIM 360 Field is that it helped us shave time from the overall project schedule," says Nathan Ducote, project manager and one of multiple pilot project participants. "This can lead directly to more savings through a reduction of general conditions and overhead. In addition, BIM 360 Field helped us cut people hours almost in half on key field management processes."



Image courtesy of Balfour Beatty Construction.