

Leveraging Bluebeam in the AEC Industry

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Portable Document Format (PDF) is the most common file format for electronic construction documents. It is an open standard maintained by the International Organization for Standardization (ISO) that preserves the presentation and quality of documents across nearly all operating systems. Adobe Acrobat has long been the industry standard for working with PDF files, owing in part to the fact that Adobe created the PDF format. However, there is another widely available product for handling PDFs, and it was developed specifically for the AEC Industry—Bluebeam.

Bluebeam offers numerous advantages over other PDF software packages for our industry and was developed to handle CAD generated drawing files. The full version contains many of the familiar tools for creating and managing PDFs. However, Bluebeam distinguishes itself with its comprehensive markup and collaboration tools. To facilitate collaboration, Bluebeam features the “Bluebeam Studio” which is a cloud-based service used to create “markup sessions.” This tool is effective when working across multiple office locations within your firm and when external collaboration is needed with other consultants, clients or agencies. A file uploaded to Studio can be shared with multiple users in multiple locations, who can see real-time comments and markups in the file. The software also generates an exportable comment log and tracks responses made during markup sessions.

Through several initiatives, the Federal Highway Administration (FHWA) is actively promoting ‘e-construction’ and ‘digital project delivery’. In response, many state Departments of Transportation (DOTs) are converting their existing paper-intensive systems to an electronic based project delivery. One commonly adopted tool for the design phase of a project is Bluebeam. Several DOTs, including Connecticut, have already converted to an all-electronic project delivery process, and the Massachusetts Department of Transportation (MassDOT) is kicking off their own switchover, anticipated in early 2019.

MassDOT is actively converting their design review process from the all-to-familiar

comment response workbooks, to an electronic comment and markup system executed through Bluebeam. Designers will submit all documents as PDF files to their MassDOT Project Manager (PM) via Bluebeam Studio. Once received, the PM will close the designer’s access to the files and assign access to the MassDOT reviewers to conduct a cloud-based review. The PM will also assign a session duration in accordance with the project schedule to help limit or control review times. After review, the PM will close-out the comment session and re-invite the designer to access the files and make electronic response to comments.

The potential benefits of this system are two-fold. Primarily, electronic delivery will eliminate the reams of paper produced at each design submission and the need to physically deliver the documents to the appropriate MassDOT offices. A secondary benefit is expected improved collaboration between reviewers, who will now all have access to the complete set of markups and comments as they are made. This should allow reviewers to identify conflicting comments during the review phase and not create situations where the designer is responsible for additional comment resolution. Cost (paper, mailings, production) and time (schedule) savings result in a more efficient and environmentally friendly collaboration and design development process.

MassDOT has several pilot projects ongoing in both the highway and bridge groups and has allowed PMs to begin using the software at their discretion. There have been several fully electronic submissions made as part of those pilots. MassDOT has also completed necessary computer upgrades and installed the software on future user’s computers. Based on current rollout status, it’s expected that all new projects will be using Bluebeam in the new year.

In light of increasing DOT use and the apparent advantages of Bluebeam, Tighe & Bond has recently undertaken several initiatives to assess its applications and benefits to our general practice. A small group of users with varied roles and levels of responsibility were asked to participate in a Bluebeam trial. Bluebeam was installed on users’ machines and set as the default program for handling PDF files, with minimal guidance provided. After the trial concluded, users were asked to provide their feedback to the implementation team—pros, cons, and useful features.

Respondents generally indicated that the Bluebeam interface was overwhelming at first, but that the software was intuitive to use and easy to learn. Its basic functions were more robust than similar software packages and it was more stable. It also contains a suite of measurement tools that allow for quick measurements and take offs using PDFs. One respondent, who has been using Bluebeam for a few years, noted the ability to create custom symbols and palettes for markups (similar to CAD) that could be deployed company-wide. Another trial participant used the Studio feature to share documents with their iPad for review and markup.

With minimal guidance or direction, the trial group reported many advantages and were able to leverage additional features into their normal practice to improve their productivity. In a separate effort, an implementation team looking for appropriate software to electronically stamp and seal drawings included Bluebeam in its market survey and noted it’s advantages for that process. The most significant advantage is the ability to “batch” sign and seal a set of contract documents.

Acquiring and implementing Bluebeam may be an important step for firms seeking work with MassDOT or other DOTs. In addition to saving time, reducing printing and delivery costs, and increasing collaboration with comment and response tracking, the program’s benefits include quantity takeoffs, cloud-based sharing of documents, template creation, and batch processing of documents. Bluebeam is available for trial use, as provided below, allowing for a hands-on experience before making a new software investment. Firms may also want to consider using Bluebeam or other cloud-based software products for all clients.

Click the following links for additional Bluebeam resources and information:

[Bluebeam Website](#)

[Bluebeam User Guide](#)

[Department of Transportation Resources](#)

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