



KPFF Streamlines Design Review and Bim Modeling with Capturx

KPFF Consulting Engineers is one of the largest structural and civil engineering firms in the US, providing engineering services to a wide range of clients from fully-staffed offices across the US and as far as Abu Dhabi. KPFF has been ranked number 108 of the top 500 design firms in the nation and number 75 in Engineering News Record's top 100 "pure" design firms.

The 975 professionals at KPFF provide a range of engineering services to public agencies and owners in collaboration with architects, contractors, and other engineering firms. The firm's Portland office, for example, employs 182 professionals, including 116 in the structural division and 66 in the civil/surveying division. With teams spread across the globe, collaboration on projects, designs and changes are challenging.

Challenge: Sharing Changes, Better Collaboration

Today, KPFF engineers and staff field workers in satellite and project offices, such as those in Abu Dhabi, need to collaborate with central office designers to keep projects on track. Changing designs and conditions can put projects at risk of delays. When as-builts diverge from original designs, teams need to share up-to-date documentation with the central offices and project leads immediately.

Engineers create sketches and annotate full size drawings in design meetings and then use scanners and faxes to share information among offices. In many cases, field engineers communicate most effectively and naturally by drawing and annotating paper designs which are shared with office staff to address field construction issues. Sharing that information requires time and resources to scan, fax, and re-enter the data into Autodesk CAD systems.

The extra time and process stifles team problem solving, slows down design updates and, increases the risk of projects delays. As teams continue working on outdated designs, the risks of mistakes and rework also increase.

Solution: Capturx Software and Digital Pens

To speed up design review and improve documentation, KPFF engineers are now using Capturx on a variety of projects. Capturx enables field teams to print and plot designs for use with a digital pen which creates redline copies and automatically integrates the markups into the original files. The designs are printed on ordinary paper through Capturx, which creates a unique digital watermark that can be understood by the digital pen.

Teams in Abu Dhabi, for example, can markup printed designs on site with a pen to note changes or confirm as-built conditions. Rather than spend time and resources to drive, scan, fax, and re-enter the data at headquarters, the teams can simply connect their digital pens to their PCs and have the original files automatically updated with markups and redlines.

Summary

Customer: KPFF, leading US structural and civil engineering firm. Ranked # 75 in ENR's Top 100 "pure" design firms.

Challenge: Sharing construction issues, speeding design updates, and improving documentation efficiency.

Solution: Capturx to immediately digitize and share field markups with project stakeholders to keep teams, documentation, and projects up-to-date.

Results: Design can be updated twice as fast with Capturx, reducing project risk while also not requiring any training, support, or mobile computers.

"We're impressed with Capturx because it works the way we do. Our teams don't have to wait for paper markups to be couriered, faxed, or re-keyed which means we can reduce the number and extent of change orders as well as make faster design updates."

STEVE VOORHEES
Senior Bim Designer KPFF

Results: Changes Shared Twice as Fast

With Capturx, KPFF has been able to dramatically improve internal communication between engineers and designers. As-builts can be updated with current changes twice as fast as before, when KPFF relied on scanning, faxing, and manual data re-entry.

Markups and changes can be made by the whole design team and quickly integrated to give the team a quick and current display of project changes. Since changes are integrated directly into the files, information can be shared through email and other existing file-based collaboration systems.

Engineers now have the ability to create sketches or annotate full size drawings in design meetings and send the info back to the office, greatly increasing design efficiency and reducing time to update. They expect that field use of the Capturx solution will enhance their ability to quickly respond to construction issues requiring revisions to technical drawings. The days of scanning and faxing are over.

KPFF: Looking ahead.

Mixed use commercial high rises are just some of the scenarios where Capturx will be deployed to help bring projects to completion faster, while avoiding costly rework due to mistakes.

Project risks are reduced by documenting changes that are immediately ready to be shared with project managers, engineers, designers, and clients through email or shared network tools.

Capturx offers the simplicity and reliability of working with paper in the field. Design changes, punch lists, and change orders are simply marked up or written on paper prints or plots. No expensive equipment, training, support, or repairs required.

Digital documentation is made immediately, and shared design changes integrated into original files in real time.