Keeping Project Information Flowing Among Team Members

Every contractor has experienced the frustration of trying to clarify construction documents (e.g., plans or blueprints), or trying to get answers to unforeseen conditions on a jobsite. Expediting communication between the construction jobsite and design and construction team members is critical. Clancy & Theys, a general contractor and construction manager specializing in team approaches to design and construction (Raleigh, N.C.; www.clancytheys.com), chose an award-winning solution: Field2Base (F2B; www.field2base.com), a wireless technology that enables field-based superintendents to convey project information to relevant parties.

At The Associated General Contractors of America's (AGC; Alexandria, Va.; www.agc.org) 2005 Best Information Technology Solutions (BITS) contest—held in conjunction with the AGC's annual convention in Las Vegas—Scott Cutler, vice president, marketing, and Don Street, site superintendent, demonstrated how F2B successfully enabled Street, a veteran field-based project leader, to instantly convey project information to relevant parties via hand-drawn sketches, annotated digital photos, CAD files, and automated paper forms, or any combination thereof. They also observed how F2B shortened response cycles for critical project communication with other members of the design and construction team—thus saving money. Their presentation garnered the company first place in the BITS contest.

"When we heard about Field2Base from a trusted ally," notes Cutler, "we believed that it could make us more efficient, and make communication from the field quicker and easier." The company decided to try F2B on a major construction management at-risk project: North Carolina State University's College of Engineering, a 211,000-sq.-ft., three-story classroom facility.

Here's Cutler's description of the various tools that come with F2B and how each is helping Clancy & Theys meet its goals in the field:

1. Digital photography and annotation. "Our College of Engineering team particularly liked F2B's digital photography and annotation capabilities," observes Cutler. *Why?* Before F2B, when questions arose on the site, project managers left the field, returned to the office, and wrote requests for information (RFIs), which would then be distributed as appropriate. If they needed to describe a condition—for example, a steel connection detail—the RFI would require a longer narrative to describe the condition, or additional steps to supply and attach photography.

With F2B, the onsite superintendent simply photographs the condition in question with a digital camera, writes a note or question on the photo using the tablet PC, and then e-mails it to the engineer or other team members. *Results:* The design team can immediately address issues without the time delay caused by a site visit. *Plus:* The approval process is sped up. "Before F2B, when approvals were delayed," notes Cutler, "we had to commit the labor force working on the issue in question to other activities or other sites, which could be inefficient, costly, or both."

For renovation projects, Clancy & Theys believes it will now be easier to document existing building conditions before starting work. As unexpected conditions occur, the company anticipates that F2B will speed dissemination of the information and expedite solutions. F2B can also simplify documentation and dimensioning (with annotated photographs) of underground utility locations, wiring or other rough-in inside walls, or other conditions.

CONTINUED ON PAGE 10

Project Information

CONTINUED FROM PAGE 7

2. Downloading existing forms and blueprints. Cutler cites several benefits of being able to download existing forms and blueprints, including:

- **Portability of drawings.** Downloaded drawings with handwritten notes can reside on a tablet PC instead of being hauled around in paper form. The PC can also enlarge plan details, making them easier to read. Or, if there is an issue with a drawing, team members can "cloud" the area in question, write a note next to it with the stylus, and e-mail it to anyone on the contact list. In addition to construction drawings, Clancy & Theys' team can also use F2B for any number of lists or forms including safety checklists, daily reports, punch lists, and RFIs.

- **Project documentation.** The recordkeeping made possible by F2B creates a reliable and continuous document trail that is instantly recorded and protects the project team from oversights or information "amnesia." This document trail, according to Cutler, is both an important project resource and could protect against future liability.

- **Notebook/journal.** Clancy & Theys has used the notebook/journal capabilities of F2B primarily to make handwritten general notes or records of conversations in the field. Used this way, F2B replaces legal pads and adds advantages like instant e-mail distribution of the documents or signatures of approval on important forms or documents, where needed.

Case in point. When questions can be asked at the exact moment a problem is discovered, and conveyed on-the-spot, there is often a sense of added urgency. When a superintendent can receive answers while he or she is at the jobsite, more time is saved. And when these answers are graphically presented in the form of sketches, photos, blueprints, and approval signatures, efficiencies multiply.

F2B allows contractors to gain access to CAD files of construction documents. These, too, can be clouded, circled, and annotated to point out questions or conflicts. In their BITS presentation, Cutler and Street demonstrated how F2B helped the superintendent develop an RFI on the spot when he discovered a conflict in a steel structure that would be in the way of the next material to be installed. He was able to:

- Instantly develop an RFI with a hand-drawn sketch (another F2B feature), and include a summary of the condition in his daily construction report;
- Access the structural drawing, annotate it, and attach it to his RFI; and
- E-mail the whole package to the designer and project manager.

The response was prompt, and after a quick review of the master schedule (also contained in the tablet PC), the superintendent got the fix under way and determined that no time would be lost.

The cost/benefit view. Clancy & Theys pays a monthly fee to F2B, which provides a packaged bundle of components, including a tablet PC with F2B software, a built-in digital camera, a wireless data card, and wireless data service. Getting started with F2B was simple and inexpensive. With a $2,500 tablet PC, $200/month for the cost of service, $30/month for wireless connectivity, and one day of training for the user, the tool was instantly cost-effective. Cost savings due to time efficiencies have more than paid for F2B on Clancy & Theys' first project. And potential project savings for individual issues remedied quickly by F2B have been estimated as high as $25,000.

System requirements. F2B requires a tablet PC running Windows XP and F2B software, a built-in digital camera, a wireless data card, and wireless connectivity. Existing or customized forms, CAD documents, and schedule or project management programs can be downloaded into the tablet PC. F2B sends information via a central server that it manages. ❑