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Engineering clients, designers click in cyberspace

By Richard Blandy
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JDB Engineering Inc., based in York, is working on the design of a foundry in Illinois for Zeco Inc. But, Zeco's New Jersey-based contractor is on a job in Georgia.

To ease communications and speed the project along, JDB is crossing state boundaries - virtually, of course.

The firm is using what it calls "virtual teams" to quickly exchange drawings and files on the Internet between key clients and project designers. The company says the approach boosts efficiency.

According to a study published in an industry trade magazine, the practice can speed projects by up to 18 percent, and save up to 23 percent of the costs.

"It's a trend that emerged just a couple of years ago and has really started to catch on in our industry," said JDB spokesman Scott D. Butcher. "We're not creating these sites as a way to generate business but to bring value to our current business and clients. It's definitely a sales tool when you're pursuing new work."

Among its clients that have used this service are Harley-Davidson Motor Co., York, and Caterpillar Inc., based in Peoria, Ill.

JBD uses the Internet to exchange drawings and files. Drawings are uploaded and downloaded via a private FTP (file transfer protocol) site accessible only to team members. Smaller files, such as text documents or low-resolution photographs, are exchanged via e-mail or remote access into the company's local area network. JDB Engineering's York and Hunt Valley, Md., offices communicate this way.

Erdman Anthony Associates Inc., Mechanicsburg, has not yet used the Internet and virtual teams concept to the same extent that JDB Engineering has, but it does see use of this technology increasing in the future.

"I think, most definitely, you are going to see it as a trend," said spokesman Ed Stetz. "PennDOT, one of our major clients, has established a major initiative on their end to make this happen through a complete cradle-to-grave project management system. They will actually indicate a need for an engineering firm to respond to a proposed project via the Internet and will select firms, contract information and make technical proposal exchanges via the Internet.

"It's pretty early on, but the real interesting thing is how much information will be available to the public through the state's ECMS, or electronic contract managing system," Stetz said.

Client service

JDB, a private company founded in 1981 by J. Donald Butcher, caters to industrial, commercial, health care, education and government markets. The firm has become one of the largest of its kind in Central Pennsylvania. Company officials declined to disclose annual revenues.

JDB offers HVAC, electrical, plumbing, fire protection, structural and civil engineering work. It has project experience in more than 20 states.

Butcher said 80 percent of JDB's business is from repeat clients, and it has expanded to meet the demands of existing clients. By expanding operations to do a larger volume of work, the company has been able to draw new clients, he explained. There are 27 employees at JDB who hold professional licenses or certifications, about 50 percent of the staff. That depth of staff, he said, has allowed JDB to open a Maryland office, and in late 1998 it formed Nutec Facilities Corp., which offers design-build and facilities-management services.

Its sprawling territory has caused the firm to adopt project Web sites, like the one where the client is in Illinois and the contractor's key personnel are in Georgia.

The site is password protected, with access limited to the engineer, contractor and owner representatives. People can transfer drawings through the site and print them directly from the Internet. All team members have the ability to add information to the site, which includes a "meeting board" that allows team members to post questions, ideas, suggestions, and concerns for all other team members to view.

The meeting board is typically used by contractors who want to suggest a superior product or approach to a particular project. It could be as specific as a different square footage suggestion for different rooms due to space considerations.

"This service allows people in many cities to communicate at one central site on the Internet no matter where the project is located," Butcher said. "The regular contractor, specialty trade contractor and client can all collaborate online at a specific Web address and set up a bulletin board or message board to monitor progress."

The site also contains a GANTT chart, which can be modified by team members. A GANTT chart, used for scheduling projects, displays task information as text and graphics and lists task duration and a finish date for the project.

To get the owner's employees to buy-in to a project, drawings are directly accessible to employees, with a special Web address published in the client's internal newsletter. A digital photo album will feature construction photos.

"You might have a design pro or architect in one office and a client on the other side of the country or the world," Butcher said. "The client can see his part of the project on the Web site. He doesn't necessarily have to have the

most current technology to participate with the virtual teams. Anybody who can view files on the Internet can view most of the text. We set the sites up so that pretty much anyone can access them, which makes it easier to communicate."

JDB Engineering is also working with a major manufacturing firm located in Central Pennsylvania, with several staff members working on-site at the client's facility. To speed the exchange of project information, a buzz-saw project Web site was established, allowing the sharing and transfer of drawings and other construction documents. Butcher declined to name the manufacturing firm.

"On these sites you will find 3-D renderings of buildings, project photos, pictures of something currently being constructed, an organization chart of team members and of course drawings," Butcher said. "Anyone working on the project, from the designer to the client, who has Internet access, can open the Web site and have all that information at their fingertips."

JDB is developing its project Web site in-house. But between 100 and 200 vendors are vying for attention as project Web site providers, according to PSMJ Best Practices, published by Newton, Mass.-based PSMJ Resources Inc., a leading provider of business training, information and consulting to architectural/engineering firms.

The CAD for Principals Council Best Practices Committee found that "when an architect and builder share intelligent CAD models via a project Web site, the duration and cost of design and construction planning can drop by 7 percent and 12 percent, respectively."

Also, according to PSMJ Best Practices, "by including subconsultants, subcontractors, and owners in the communication, time savings reached 18 percent and cost reductions, 23 percent."

Many engineering firms are gearing up to create virtual project team sites. The Internet-based project management approach will most likely become commonplace among engineering firms in the future, Butcher said.

"There is going to come a time when almost any project will have a project Web site," Butcher said. "That is the future of this industry. As with any technology you learn one thing one moment and the technology has changed the next."

Info box

For more information about "virtual teams" or the Internet-based project management approach, you can visit the JDB Engineering Inc. Web site at www.jdbe.com

Photos: Steve Lock

Scott D. Butcher of JDB Engineering Inc. says plans like those shown here can be loaded onto a Web site, where "virtual" teams and clients can work on them. "This service allows people in many cities to communicate at one central site on the Internet no matter where the project is located."

John E. Hudacek of JDB Engineering works on a client's drawing on the Web site. Changes made to plans can be viewed within 10 minutes.
