Computerizing the Estimating Process

How Tomlinson Engineering implemented a computerized estimating system

Tomlinson Engineering of Charlotte, North Carolina, has always prided itself on the wide variety of specialty work that it handles. The 33-year-old company does a range of interior work from acoustical ceilings to access flooring to fireproofing. “We like to do the jobs that are a little unusual, a little different,” says James Tolman, the senior vice president at Tomlinson. “We’ve always had a good reputation for quality and specialty jobs.” Indeed, Tomlinson projects have had considerable impact on the Charlotte skyline over the years. Their local client list includes such notables as the Charlotte Coliseum and the NCNB National Bank building which, at 60 stories, is the tallest building in the Southeast.

Because of the specialized nature of their work, the decision to computerize the estimating department did not come easily to Tomlinson. “We had been looking at estimating systems for a good year and a half,” Dan Wohlbruck, Tomlinson’s senior estimator, says. “The problem that I had was that they were all for general construction. None of them would fit our specific needs.”

After spending more than a year attending trade shows and investigating prospective systems, Tomlinson selected the Bidmaster Plus computerized estimating system from Estimation, Inc. of Maryland. Rather than purchase three individual computer packages, Tomlinson chose Estimation’s Xenix (multi-user) system with three workstations, one each for Tomlinson’s acoustical, drywall and fireproofing departments.

Since the wide variety of work that Tomlinson performs would have meant a single huge and unwieldy database, the decision was made to purchase two separate software packages, each with a different working database of several thousand items. A true multi-user system, the Bidmaster Plus Xenix version lets all three of the workstations be tied together so that either database can be accessed from any station and bid information can be transferred between the different applications. When Tomlinson receives jobs that require bidding from all three departments, the Xenix system allows several estimators to work on the same job simultaneously. Information from all three applications can then be merged into one complete bid. Tomlinson also opted to have digitizers installed at two of the workstations to dramatically speed up takeoff.

Martin Whitley, Tomlinson’s drywall estimator, was on line with his system in less than a month. “I think it’s a big advantage to computerize,” says Whitley. Although he had been warned that it was possible to price out too low using a computerized estimating system, Whitley says he feels comfortable with the numbers he is generating. During the initial system setup he spent time customizing the database and taking advantage of the system’s flexibility to fine-tune bids to his own methods and standards. “When I do labor I’ll take units of material such as lineal footage of stud or lineal footage of track, square footage of board, labor to hang it, labor to finish it, and square footage of insulation; and then I can apply

Tomlinson Engineering, Charlotte, North Carolina
Martin Whitley, Tomlinson’s Drywall Estimator

Dave Eddy, The fireproofing estimator, demonstrates the use of the Bidmaster Plus system with a Dodge/Scan machine

difficulty factors to it for high work or for decorative work. I can take my figures and break them back out into man hours or lineal footage unit price, dollars and cents or whatever seems simpler in getting to that bottomline. It lets you do it the way you want to do it.”

Whitley uses the system for everything from takeoff to final summary for complete automation of the drywall estimating department. With the Bidmaster Plus computerized system, takeoff becomes as simple as touching a stylus to the blueprint on your digitizer board and then selecting from a digitizer pad the individual item or complete assembly needed. The system automatically scales the information, translating it into dimensions, and takes off the selected item or assembly in the appropriate quantity. Components such as stud, track, drywall, insulation, screws, shots and pins and tape are automatically calculated, and labor and price extensions performed. The system also generates reports and a bill of materials based on the takeoff information.

During the installation and training period a trainer was sent from Estimation to assist Whitley in setting up the system and modifying the database. Unlimited toll-free telephone support was also available from Estimation’s customer service department. Whitley feels that the time he spent adapting the system to his method of takeoff was well worth the results. “On an average I can probably increase my productivity close to 50%,” he says.

Since a software package designed specifically for fireproofing was not available, modifications to a painting program were necessary before Dave Eddy, the fireproofing and acoustical estimator, could begin work.

Eddy, a newcomer to the computerized estimating field, was initially hesitant about making changes to the system’s database. “I went through the usual training class in Florida” he says, referring to Estimation’s four-day, comprehensive training course. “But I’m in my late 40s and never used a computer until recently. Like a lot
of people in my generation I was afraid of them, so I had a block. Once I overcame that I was able to make much better use of the system.” The modifications, which took Eddy only three days to complete, turned out to be surprisingly simple due to the flexibility of the system itself and required only a few basic file maintenance procedures. Eddy now uses his Bidmaster Plus estimating system for complete quantity summaries in both the acoustical and fireproofing departments and confesses that he makes an effort to stay away from the plan rooms so that he doesn’t have to take off jobs manually. “If I can use this system, anybody can,” he says.

Computerizing the estimating department has dramatically decreased the amount of time required to get a bid out, allowing the Tomlinson estimators to bid jobs they would have previously turned down due to lack of time. One such job, currently in progress, involved a bid on a 55-story building. The official bid deadline for the job was less than 18 hours from Tomlinson’s receipt of the blueprints. As Dan Wohlbruck pointed out, “Were we doing this manually, it would have taken us more than a week. With the system it’s going to take us a day and a half.”

Tomlinson estimators make extensive use of Dodge Scan machines for both estimating and job review, giving Tomlinson the opportunity to participate in major jobs all along the East Coast from Washington, D.C., to Florida. The estimators use a special digitizer that is fully compatible with the Dodge Scan machine and allows takeoffs to be done directly from the firm projections. With this combination of technology, blueprints can be reviewed by geographical area and either screened for potential or used for takeoff. “We do about 50% of our takeoffs right off the film and we do use it to review jobs,” says Wohlbruck. When not in use with the Dodge Scan machine, the digitizer can also be used with regular blueprints.

Response to the computerized system has on the whole been favorable, especially in light of what the estimating department calculates to be a 30-40% increase in bid output as well as heightened accuracy. “The calculating time is what’s really eliminated, and that’s about half the total,” says Wohlbruck. “I’d say the biggest increase has been in accuracy. Since we don’t have to worry so much about adding our numbers together we can devote more energy to studying jobs and analyzing things. In the past we had to spend so much time getting the numbers cranked out, we sacrificed that.”

Currently Wohlbruck is working on integrating the estimating system with the Lotus 1-2-3 spreadsheet, a feat made possible by the addition of Estimation’s Workstation Manager program. Workstation Manager allows the transfer of information between two different types of computer systems—in this case, the multi-user estimating system and a single-user desktop system—to integrate estimating with virtually any type of software package. For Tomlinson it means that their estimating information can be transferred directly to an accounting spreadsheet for review and approval by management or a client.

Senior vice president James Tolman concludes, “We feel more comfortable with the exactness of our estimates, and that gives us more confidence when we’re trying to decide how tight we can take a project and how accurate our quantities are. I think we feel pretty good in that sense. I just generally feel our confidence level has increased.”

Construction Dimensions/October 1990 59