



FEATURE

Managing Project Productivity Rates and Goals: Sounds Like a Job for 'FieldMan'?

by Ron Churchey

Your construction project is only 85 percent complete and your entire budget is gone. What could you have done to avoid this? You should have brought in productivity superhero, "FieldMan."

Since January 2012, Shapiro & Duncan, Inc. has been using a custom-designed project management software program to help get a better handle on productivity rates and goals in relation to project budgets. Dubbed "FieldMan," short for Field Manager, this program not only helps nail down the hours to complete a mechanical project, but also provides a toolkit for short interval planning and time entry in the field.

Traditionally, construction project managers have used the "percent complete" method to gauge productivity against budget. For example, the foreman in the field walks the job and does an eyeball estimate that the job is "X"

percent complete. Typically, only one cost code is used per system. Too often, this method is little better than a hope and a prayer.

To maximize productivity, Shapiro & Duncan starts with estimating software that develops complete material lists and quantified budgets for labor hours and materials required by task. Construction teams use these outputs as a baseline for productivity tracking.

With FieldMan, the construction management team can create a short interval planner, track productivity and provide weekly production goals. SIPs are used to give the field one week "look-aheads" for the required tasks, which helps the crews stay on budget and on schedule. Most importantly, FieldMan enables management to communicate clear productivity goals to field crews. Every Friday, the field foreman completes his Short Interval Planning sheet in FieldMan. This lets the field foreman know by cost code, area and crew size the amount of production units that are required to be installed the following week. (See Fig. 1)

productivity issues. The marching orders coming out of that planning session were that construction management teams had to do a better job of managing labor risk and get a firmer handle on project completion costs.

Making this happen required a fundamental shift in how progress on a project is measured. The old fashioned "percent complete" method was scrapped in favor of a new "earned hour" method based on the earned value of actual installed quantities. Instead of walking a job and guesstimating the percent completed, foremen now report installed quantities of materials by system and area on a daily basis. FieldMan then calculates the earned hours based on these actual installed quantities. The program compares the earned hours to budgeted hours, actual hours used and hours at completion. As a result, forecasting and reacting to budget issues happen much more quickly. (See Fig. 2)

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- Shapiro & Duncan uses project management software to manage productivity rates and goals.
- Forecasting and reacting to budget issues happen more quickly.
- Project crews now know what the expectations are.

Fig. 1



FieldMan was a result of a strategic planning session in which Shapiro & Duncan's executive leadership team took a hard look at how the company was estimating costs and dealing with

Fig. 2



The estimating program provides the material quantities and the labor hours to install those quantities. Turning in spreadsheets and tracking time for 50-plus people can be a big headache on construction projects. FieldMan, however, allows foremen to input daily time reports that

are tied into the company payroll system. This prevents duplicate effort by allowing the payroll department to import daily time into the payroll system and not enter time from time sheets. Using FieldMan, the earned value of installed quantities can be clearly seen and accurate historical data provided on how many hours it takes to complete each task. This gives project managers a much better handle on how many crew members should be on a particular task. Management can see when goals are not being met and then have an opportunity to make the corrections necessary to improve the productivity rate. The improved transparency provided by FieldMan has resulted in better, more proactive planning and has made cost forecasting more accurate. As a result, productivity on Shapiro & Duncan's mechanical construction projects has improved dramatically over the year and a half plus that FieldMan has been in use.

There were, of course, many implementation challenges. Converting project estimating,

productivity planning and timekeeping to a unified Internet-based system required a significant cultural change and a major learning transition. The earned value method of calculating productivity is fairly new in the mechanical solutions industry. Not many of Shapiro & Duncan's competitors are using it.

The rewards thus far are proving to be well worth the effort. Now project crews know what the expectations are in terms of number of crew members and what that crew has to install from week to week. This has actually improved morale by creating a friendly competition among crews. Teams with the best production rates are receiving incentives.

Like many mechanical contractors, Shapiro & Duncan is challenged to adapt to the latest technology while dealing with changing margins on profitability of projects. Fortunately, the company's leadership has the vision to embrace technology as it adapts project planning and management methods to become a more efficient and a better company.

The biggest advantage of FieldMan

is that it offers more certainty that when a project is taken on, the job will be done right and under budget. By setting productivity goals based on the earned value of installed material, as opposed to "hope and a prayer" completion percentages, FieldMan reduces the likelihood of labor overruns.

Moving forward, by helping field crews beat their numbers and be more competitive, FieldMan is taking Shapiro & Duncan to the next level as a contractor.

Ron Churchey is director of project management at Shapiro & Duncan, Inc., the "Mechanical Solutions Provider of Choice" for complex commercial, government and institutional design-build projects throughout the Washington, D.C., metro area. A third-generation family business based in Rockville, Md., Shapiro & Duncan continues a 36 year track record of dependability and innovation that has consistently enabled the company to deliver high value and efficient mechanical infrastructure to its customers.

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