

business issues

EFFECTIVE PROJECT MANAGEMENT

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Strong teams and strong phasing make for strong projects.

THE CRITICAL PATH of most construction projects these days runs through the steel fabrication shop.

And an experienced project manager is an essential part of a successful project. There are many tasks a project manager is required to complete, and at times this can be overwhelming. By breaking the project down into distinct phases, even a very large project will seem more manageable.

Get a Running Start

No matter how large or small the project size, getting a newly awarded project started on the right foot is critical. With the fast-paced nature of today's construction industry, any early delays on a project can have lasting effects on the success of the job. The estimating team that worked on bidding the project should be the project manager's first stop in getting started. A smooth transition from the estimating department to the project manager includes a transfer of all information accumulated during the bidding stage.

Estimators should summarize the requirements of the project as they understand it. What is the schedule? Are there any long lead time items that need to be purchased? Are there any special coating requirements for the job? Are there any pricing agreements with material suppliers? Are there any subcontracts that need to be awarded? Clear communication between the estimating group and the project manager can save valuable time getting the new project started.

Assemble the Team

The project manager should not feel like they are alone on an island left to fend for themselves. The successful execution of a structural steel project requires a team effort. Once the project has been turned over to the project manager, it is time to assemble the team that will help execute the job. Internally, the fabricator should have a chief draftsman or engineering manager to help get the detailing started. A procurement manager should be able to help get material ordered while the shop superintendent or foreman can help in reviewing specific details to improve shop efficiency.

In addition to internal company resources, the project manager has many outside resources at their disposal. The project manager must carefully select a detailer and perhaps a connection design engineer. Subcontractors must also be selected and can include joist, deck, grating and miscellaneous metals suppliers. On large projects, additional fabrication shops might also need to be subcontracted. It is important to get your team assembled so that they can start supporting your efforts on the project.

Stages of a Project

Once a new project has been turned over to the project manager, the first and perhaps most important part of the project begins. The planning stage is a critical time in the life of a project. The time spent and decisions made during this portion of the project sets up all the other phases of the project for success. This is a time for the project manager to make contact with the customer and engineer of record

(EOR) for the job and establish contact points and lines of communication for both technical and commercial questions. This is also a time to issue the contract documents to the project team so they can have input on the job. Who will be the erector and what special requirements should be considered for erection? What is the erection sequence so you can start the detailer in the right direction? Are there any special connection design issues to consider? Are there any shop preferences that should be considered? Don't let a third party do the planning for you. You know what works best in your shop.

Some fabricators have developed checklists over many years that can be used during the planning stage. Past lessons learned can be summarized on the checklist to avoid repeating errors from previous projects. These checklists are especially helpful for younger project managers who can draw on many years of experience while planning the job.

The planning stage is a fast and furious time for the project manager. It often means long hours, but it is during the planning stage where the project manager becomes intimately familiar with the job. Once the plan has been set up, it should be reviewed with the team. A face-to-face meeting to review the pre-plan with the customer and the EOR will help eliminate any surprises during later phases of the project.

The old saying "Plan your work then work your plan" applies as much today as ever, and the next stage of the project is the execution phase. The first step in the execution phase is the detailing. The project manager, in consultation with the chief draftsman, selects a qualified detailer to be a part of the team. Establish a detailing schedule that clearly shows when drawings will be sent for approval, how long the drawings should be out for approval and when drawings will be ready for the shop. Oftentimes during the detailing stage, several RFIs are generated by the detailer. It is always a good idea for the project manager to review these detailing RFIs before passing them along to the EOR. Many times, the project man-

ager can answer the detailer's questions without involving the EOR. By limiting the number of RFIs sent to the EOR, you allow the EOR to focus more time answering the questions that truly require their input.

During the detailing stage, a comprehensive status report should be created. The status report is a great tool to help track all aspects of the project and should summarize the quantity and status of the shop drawings. It should show the fabrication and shipping status. For larger projects, color codes can be used to help draw attention to fast approaching due dates. This report is a valuable tool to share with all members of the team and can be used during weekly conference status calls.

The next step in the execution phase is the shop fabrication. The project manager should meet with the shop superintendent several weeks before the start of fabrication to review any special requirements or unique fabrication items on the project. This will help make sure that there are no surprises once fabrication begins. As fabrication approaches, the project manager should relay the fabrication sequence and shipping priorities to the shop. Once fabrication begins, frequent visits to the shop can help the project manager track fabrication progress. Also, since the project manager is intimately familiar with the job, they may be able to notice and catch issues that could cause problems later in the project.

The final step in the execution stage is the erection of the steel. Once fabrication has started, the project manager should stay in contact with the erector and reconfirm the sequence of erection. This is another time where it is handy to have a checklist of things to confirm prior to the start of delivery. Have the final issue drawings been transmitted for field use? Have the field bolts been delivered? Are the shims for the columns loaded on the first truck or sent in advance? What is the coming weather for the next few days? Is erection progressing so we can make the next delivery sequence? Communication is the key to material flow to the jobsite and

smooth erection. If the project manager takes care of the erector, the erector will help take care of the project manager.

Changes to the Project

It is normal these days for the fabricator to be brought onto a project earlier than what has been typical in the past. As a result, changes to the contract drawings are a normal part of any steel fabrication project. The project manager should have a system to document and track any changes to the contract documents. When revised documents are received, send a letter to the customer notifying them of the change. Let them know that you are evaluating the change for any cost or schedule impact. It is important to alert the customer right away while the magnitudes of the changes are being evaluated.

Once the review is finished, it is time to submit your change order request. This request should be complete and thoroughly explain exactly what changed and how it impacts the cost and schedule. You can mark up a set of drawings showing the before and after so the customer can visually see what has changed. The more time you spend putting a complete change order request together, the less time you will have to spend explaining where the added cost comes from. Good change order management can make or break the success of a project.

The idea of forming a team, creating a plan and then following the plan is a successful blueprint for any project, no matter how large or complex. The project manager must remember to be flexible. No matter how detailed the original plan is, situations change, requiring quick action by the project manager to keep the job on track. The project manager should always remember that they are part of a team and have the proper support to help them keep the project headed toward successful completion. ■

This article serves as a preview of Session P8: "Effective Project Management" at the 2019 NASCC: The Steel Conference, taking place April 3-5 in St. Louis. For more information and to register, visit www.aisc.org/nascc.