Fast-Track Project Design
The New Normal

By Ed Edmondson, Project Director, and Tammy Lynam, P&I Quality Manager

Fast-track project design has gone from being the exception to the rule. When executed properly, a fast-track project has the potential to give an owner organization a business advantage over its competition by enabling it to get its product to market more quickly. Construction Industry Institute (CII) Best Practices are critical to achieving that success.

CII is a consortium of more than 130 leading owner, engineering-contractor and supplier firms from both the public and private arenas. These firms have joined together to complete research with the goal of measurably improving capital project execution.

CII’s Research Team 222 looked at fast-track project design. A fast-track design-build project will significantly overlap the design phase with the procurement and construction phases. The team found that a design change during the late stages of a project is one of the most influential factors in undermining schedule control in the current fast-track environment.

Engineering design is inherently an information-intensive process. In a traditional linear project, engineers and designers have access to complete, basic design data and owner’s requirements for detailed design work. In fast-track projects, information in the initial stages is limited both in its quantity and...
quality, requiring engineers and designers to make certain assumptions regarding specific dimensions, weights, utility requirements and site-specific nuances. It is important for project teams to recognize this reality and be prepared with work processes and mitigation strategies to address those situations where initial assumptions were incorrect.

Considering that projects are growing in complexity, implementing key CII Best Practices is important to success. In this study, CII’s Research Team 222 found that improvement occurs in a fast-track project’s schedule performance as the extent of implementation increases for front-end planning, change management, constructability and alignment.

Project teams need to have the courage to start slow so they can work fast. It is important that owners take time to participate in front-end planning for their projects. Involving their key stakeholders in the planning process will enable engineers and designers to make better assumptions and creates alignment on the project scope.

In addition to engaging the owner’s key stakeholders during front-end planning, the project team needs to address the constructability of the proposed design. It is important to engage experienced construction personnel regarding issues like site accessibility, material handling, activity duration, sequencing and work packaging. Changes to the design that are required to improve the constructability of the facility are much simpler when they are made during the front-end planning stages of the project.

Front-end planning defines the project and helps minimize the number of surprises the project team needs to manage once it gets to the field. CII’s Project Definition Rating Index (PDRI) is an easy-to-use tool that gives the project team a measure for how well it is doing and a mechanism to create alignment before moving forward (Figure 1).

Once the project team has a well-defined scope, change management becomes critical. Scope creep is detrimental for a fast-track project. It is easy for the project team to lose sight of the project objectives. Requests for minor additions to the project that are either nice to have or fix other unrelated problems will drive up the cost and extend the schedule. The owner, engineers, procurement and construction professionals all need to work together to freeze the project scope and keep the project objectives in front of them.

CII’s research has identified 15 industry-validated best practices:

- Alignment
- Benchmarking and metrics
- Change management
- Constructability
- Disputes prevention and resolution
- Front-end planning
- Implementation of CII research
- Lessons learned
- Materials management
- Partnering
- Planning for startup
- Project risk assessment
- Quality management
- Team building
- Zero-accident techniques

When used together, these best practices will improve a project team’s performance. CII has many tools and publications available on these best practices that can be used by project teams to successfully plan and execute their fast-track projects.

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