



CONSTRUCTION INDUSTRY INSTITUTE®

BEST MODERN PRACTICES
FOR DESIGN IN FAST TRACK
PROJECTS

Construction Industry Institute

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Zurich

Best Modern Practices for Design in Fast Track Projects

**Prepared by
Construction Industry Institute
Best Modern Practices for Design in Fast Track Projects
Research Team**

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Executive Summary

Fast track design-build projects significantly overlap the design phase with the procurement and construction phases. In a fast track project, design becomes the prime mover of project progress because the performance of procurement and construction processes depends on availability of timely and accurate information from the design process.

CII formed the Best Modern Practices for Design in Fast Track Research Team to study this facet of construction. The main objective was to identify best practices that have an impact on the performance of the design phase in fast track projects. Secondary objectives included the identification of correlations between use of CII Best Practices and performance of the design phase in fast track projects, challenges faced in managing the design of fast track projects, and solutions used to mitigate these challenges.

The results indicate that those best practices identified by the research as being most influential to successful management of design (*front end planning, change management, constructability, alignment*) were also found to have a statistically significant positive correlation with the schedule performance of design in fast track projects. The most commonly faced challenges in managing design in fast track projects were identified as:

1. Lack of adequate front end planning.
2. Inadequate alignment within and across organizations working together in projects.
3. Scope creep resulting in changes.
4. Getting timely and accurate information from suppliers.
5. Coordination and teamwork within the design team and between organizations.
6. Limited availability of skilled and experienced design work force.

Introduction

Design is inherently an information intensive process. The basic input for the design process is information from various stakeholders. The accuracy and timeliness of the information and the skills of the designers who convert this input into drawings and specifications determine the success of design in fast track projects.

Fast track projects are different from traditional design-bid-build projects because of the significant overlap between the design, procurement, and construction phases. The additional time constraints imposed by the concurrent nature of the design phase with construction procurement activities result in additional requirements for accuracy and timeliness of the flow of information from various stakeholders into the design process.

External factors have an impact on the schedule and cost performance of the design phase as well as overall project performance. These external factors include project complexity, code/regulatory requirements, project team turnover, project team performance, offshore engineering, and funding/finance.

In a traditional linear project, the designer has access to complete, basic design data and owner's requirements for detailed design work. In fast track projects, limited quantity and quality of data in the initial stages increase the necessity for designers to make certain assumptions. A report by the Building and Economic Development Committee showed that more than 50 percent of the problems encountered on building sites were related to poor design information. This situation is exacerbated by the tight schedule requirements of fast track projects, resulting in less than optimal designs and frequent design changes.

Insufficient owner participation in front end planning also can lead to changes in scope as well as design. A study conducted by the European

Construction Institute found that a design change during late stages of a project is one of the most important factors in undermining schedule control in a fast track environment.