Project Management: Using Design/Build Techniques on Design/Bid/Build Projects

By Ronald R. Leaders, Esq.

Design/build benefits are available under non-design/build contract delivery systems. A contract delivery system generally describes the contractual obligations, roles and responsibilities of the contracting parties. Within each contract delivery system the parties to the contract can implement a wide variety of contract management and project management techniques to implement the contract. Many of the design/build techniques described in this article can be incorporated into other more traditional forms of contract delivery systems to obtain similar benefits.

Over the last decade, the design/build method has experienced great popularity. Benefits of design/build are well recognized. Overall constructed costs are reduced by 6%, and time of project completion is up to 33% faster, when compared to a traditional design/bid/build (D/B/B) contract delivery system.

This article will illustrate how project owners, consultants and constructors can achieve many of the benefits inherent in the design/build contracting process by using design/build contract management and project management techniques on non-design/build contracting.

Design/Build Benefits

The Construction Industry Institute (CII) has published comparative benefits between the design/build and traditional D/B/B project delivery systems. Design/build benefits include:

- 6% lower costs
- 12% faster construction
- 33% faster project delivery (design and construction)
- 5% less cost growth
- 11% less schedule growth

These benefits are achieved from a combination of contracting-based benefits (e.g., single point of responsibility) and contract management and project management techniques (e.g., collaboration and improved communication between design and constructor, partnering and early dispute resolution programs).

For those project owners who cannot or choose not to use design/build contracting, many of the benefits of the design/build project delivery system can still be achieved by using many of the contract management and project management techniques (“design/build techniques”) that can make design/build contracting successful. These key design/build techniques include implementation of excellent project communications, effective use of collaborative relationships, construction input early in the planning phase, and dispute avoidance/early resolution programs.

Implementation of Design/Build Techniques Into Traditional Design/Bid/Build Contracting

CII project performance research identifies a number of design/build success factors ideal for transfer to traditional D/B/B contract delivery systems. These design/build techniques include:

- Construction input early in design process
- Excellent project team-owner communication
Contractor and subcontractor experience on type of facility

- Team experience with design/build practices.

Successful implementation of design/build techniques should include development of a balanced, commercially-reasonable risk allocation program, in which specific risks are allocated to the parties best able to control or assume financial responsibility for the allocated risk.

Tools and resources are available to allow the project members to predict the likelihood of successfully implementing design/build techniques into specific projects. The CII has developed a software tool that can be used to evaluate the potential dispute index on projects by evaluating key considerations in successful project implementation. This tool can be used at any stage of a project, including evaluation of a project in trouble.

An effective project management system that includes standardized forms, sample documents and guidance will assist the project teams in implementing design/build techniques on all types of contracting systems. Given the adversarial practices and attitudes that often dictate the behavior and relationships among various project participants on traditional D/B/B projects, it will not be a simple matter for an owner, its design team and its constructor to understand or be receptive to implementing design/build techniques. Owners will need to consider selection of entities and representatives for their projects that possess an understanding and willingness to implement design/build techniques. Consultants involved in qualifications-based selections will see the benefit of developing expertise and skills in implementing design/build techniques for a wide variety of project contracting methods.

In addition to the importance of standardized documentation, training and selection of senior project personnel with an understanding of the value of implementing partnering, teaming, improved project communication and collaboration, and early dispute resolution are indicators of successful project outcomes.

**Specific Design/Build Techniques**

The key elements of successful implementation of design/build techniques involve early construction input, improved communications among all project participants, increased collaboration and teamwork, and a genuine shared interest in a successful project result for all project participants.

Early Construction Input. One of the primary benefits of design/build contracting is the close coordination of the design and construction processes. Industry research has identified that early construction input into the planning and early design development can reduce overall construction costs by as much as 20 percent. The magnitude of this benefit is due to the ability of construction contractor perspectives, means and methods to be fully considered during design development and final design. For a traditional D/B/B contracting method, inclusion of consultants with actual construction experience on the project planning and design team can achieve many of these significant benefits for project owners.

Reasonable allocation of risk among project participants is a common element of successful project outcomes. Owners who insist on inappropriate allocations of risk do not provide an environment conducive to teamwork and collaboration necessary to improve likelihood of successful project outcomes. Risk allocation provisions should address change management, risk of changing and unforeseen conditions, and safety and liability issues.

Teaming and Partnering. Establishing a teaming and partnering environment with project participants is a critical first step for implementing design/build techniques. This technique extends the construction phase partnering into earlier phases of the construction project. Successful teaming and partnering require involvement of all project participants and identification of mutual goals and benefits of all participants. Not all project participants can be expected to have the experiences, skills and motivation to successfully implement teaming and partnering during a construction project. CII’s Dispute Potential Index can be used to evaluate the likelihood of project disputes with the specific project participants.

Improved Project Team Communication. The most critical factor indicating likelihood of successful project results is the ability of the project managers to effectively communicate. Many technical project managers confuse rapid exchange of data with effective communication. Poor communication and misunderstandings among project members are some of the most common reasons for project performance problems, disputes and claims.

Contract management and project management processes that include standardized processes, documents and training are an effective foundation on which to develop effective team communications.

Selection of project managers for their superior communication skills and team-building skills is one of the most effective methods to increase the likelihood of excellent project results. Training to improve communications and other
team-building skills of existing staff can also be instituted, but has limited capability to provide rapid improvement to a project team. A third method of improving project team communication and teamwork is implementation of a series of tools, forms and protocols that will enhance communication and teamwork behaviors, supplementing the existing skills of the project team. The success of the design/build process is due in part to the development of communication and team-building programs.

Dispute Avoidance and Early Resolution. Construction projects involve substantial amounts of information, which provides significant potential for misunderstandings, disagreements and disputes. Successful design/build projects generally have developed an informal or formal dispute avoidance or early resolution process. These programs often include formal methods for quickly escalating disagreements to higher authority levels to accelerate final resolution without impairment of relationships that are critical to successful project results. Project neutrals or dispute review boards are other techniques that can be used to secure the benefits available from effective dispute management.

**Lessons Learned**

Design/build contracting includes a number of contract management and project management techniques that are often the focus of successful design/build projects. Many substantial project failures involve failure of the design/build team, often including the owner, to successfully implement the contract management and project management techniques essential for project success. Form of contract is often not as important as the effectiveness of the implementation of the contract management and project management techniques required for successful project performance.

**Marketing Opportunities**

Project owners, design professionals and constructors who can successfully implement design/build contract management and project management techniques into both design/build and D/B/B contracting stand to benefit from marketing advantages as owners realize the benefits from design/build techniques. A significant marketing opportunity exists for differentiating a firm's practices from its competition.

**Conclusion**

Design/build techniques can be applied in a wide variety of contracting methods to achieve many of the substantial benefits of the design/build contract delivery system, even when design/build contracting is not used.

Owners can be expected to increasingly seek the financial and project performance benefits available from either the direct use of design/build contracting or the implementation of design/build techniques into other contracting methods. Design professionals who can be instrumental in guiding their clients to achieving many design/build benefits through the use of design/build techniques stand to gain market share as clients include these factors in their selection criteria.

Successful implementation of design/build techniques can also be expected to reduce disputes, claims and, ultimately, insurance premiums.

Ronald R. Leaders’ law practice emphasizes construction, design and environmental law issues. He represents construction contractors, design professionals, material suppliers and public owners.

Prior to founding the law firm of Buckley & Leaders, Mr. Leaders was a former Managing Director, General Counsel and Partner in R. W. Beck, an international engineering and construction management firm; Associate General Counsel with Morrison-Knudsen Company, an international construction and environmental services company; and Contract Manager in the petrochemical industry with Bechtel Corporation and Chevron Corporation. He is a founding member and past chairman of the General Counsel Forum of the American Consulting Engineers Counsel. Mr. Leaders is also a former member of the Engineers Joint Contract Documents Committee and was involved in the development of the EJCDC Design/Build set of documents.

Mr. Leaders received a Bachelor in Chemical Engineering and M.S. in Metallurgy from Georgia Tech and a J.D. from the University of San Francisco.