

## Design/Build-Bridging (D/B-B) Documents

### Introduction

There are various delivery methods for executing the successful design and construction of projects. This article explores one of the more common methods, Design/Build-Bridging (D/B-B<sup>1</sup>), though the method selected should be appropriate for the scale, complexity, and constraints of the project. D/B-B combines elements of the traditional Design-Bid-Build (DBB) method, with its separate contracts for design and construction, and the Design-Build (D/B) method, with its unified contract that typically gets the design services from a subcontractor to the construction contractor. The objective of D/B-B is to retain the best features of both, including better control of the final design and tighter cost and schedule constraints due to fewer unknowns within the proposal, while allowing for innovations in approach.

### Bridging Documents

Bridging documents differ from typical architect and engineer (A/E) submission requirements described in DRM Appendix E<sup>2</sup> in that each discipline needs to be developed to a level necessary to define and design, and there must be sufficient coordination between disciplines to reasonably demonstrate fit and function within any known constraints. The Contracting Officer's Representative (COR) must develop Scope of Work (SOW) language to convey to the designers responsible for creating the bridging documents that each discipline should be sufficiently developed to demonstrate design feasibility. Under-definition increases the risk of increased initial cost and schedule, change orders, post-award with additional cost, and schedule impacts. A D/B-B submission package generally consists of:

- **Basis of Design (BOD):** This document describes the technical requirements and constraints of the project, including the design intent of the users and their acceptance criteria for the work. These parameters must, through narrative and graphical content, adequately describe the rationales and methodologies used in feasibility studies (whether informally integrated into the bridging documents or formally submitted through a stand-alone document with the D/B-B package). The BOD should be organized to address each discipline and must have a description of the significant products used in the design described in the feasibility study.
- **Drawings and Specifications:** Drawings and specifications demonstrate the technical approaches for meeting the user's design intent, mitigating identified risks, and providing a constructable, commissionable, operable, and maintainable model for the final design to be executed by others. Higher resolution modeling is provided for the most critical aspects and lower resolution for the less critical. They must be sufficiently advanced to convey the design intent of the project.
- **Calculations:** The D/B-B documents describe the capacities, limitations, and assumptions that their authors have determined. The A/E of record may develop a significantly different approach, but this demonstrates the ability to meet the

requirements and accommodate project constraints, establishes a baseline for future comparison, and provides a basis for evaluating D/B pricing and scheduling.

- **Other Documents:** Additional documents may be required to establish the reliability of the bridging documents, including feasibility studies, risk assessments, special studies, surveys, commissioning and/or validation plans, cost and schedule estimates, etc.

### Review of Bridging Documents

A bridging document is traditionally described as an A/E's 35% Construction Document level submission. While this may be appropriate for a simple project, complex projects may require more advanced development for some disciplines to identify gaps and conflicts, assure full incorporation of lessons learned and best practices, prove or disprove assumptions, holistically describe scope, and attain other benefits inherent to D/B-B. Reviewers should be aware of the potential for unequal development across disciplines. The COR needs to communicate the level of development of each discipline so that reviewers apply appropriate Appendix E level of development expectations to a submission on a by-discipline basis, rather than assuming a uniform level. The COR should also ensure that a full D/B-B document package is provided to the reviewers, inclusive of the documents described in this article, with the SOW to help provide an appropriately calibrated level of review. It is also crucial that sufficient time and appropriate discipline-specific specialist reviewers be provided to perform their reviews.

### Conclusion

A D/B-B package can determine the viability of a project before investing in a full design; control project costs and duration by minimizing the bidder's need to build in as much "padding" in cost and schedule proposals to account for unknown risks; and greatly increase the likelihood that the final product will meet the user's requirements, particularly in large and/or complex projects. D/B-B package review can create challenges, but when the COR properly communicates the scope, much of the friction between the COR, designers, and reviewers can be avoided and the benefits of this approach can be more fully realized.

### Additional Reading

1. There is a lack of industry consensus on the abbreviations used regarding this topic. Due to space constraints, the author has elected to conform to the typical usage of the General Services Administration (GSA) here, including Design/Build (D/B) and Design/Build-Bridging (D/B-B).
2. The National Institutes of Health (NIH). *Design Requirements Manual*, <https://www.orf.od.nih.gov/TechnicalResources/Pages/DesignRequirementsManual2016.aspx>

