# Is design-build the right choice for you? The advantages and disadvantages to be aware of

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In the last two to three years, the building and civil engineering industry has witnessed a dramatic increase in procurement of a project using a single-entity mechanism, Design-Build (D-B). During this time, much has been written on the inherent advantages of this procurement method, but little on the risks and potential pitfalls associated with it. Before committing to a D-B project, an owner should be equipped with both the advantages and disadvantages in order to properly prepare its organization upon commencement.

The advantages

The driving force behind the selection of D-B as the delivery method varies with each owner. Typically, the perceived savings in time from project initiation to ribbon-cutting is a primary consideration. This comes about principally from the overlap of design and constructionâ€”it's often not necessary to completely design the building before construction commences. A further advantage to some owners is relative cost certainty earlier in the process, although this early pricing is usually based on limited information. (This lack of information will then usually increase the risk for the D-B entity, leading to a higher budget to cover those risks - see cautionary aspects below).

With the recent pressure on some public agencies to commit American Recovery and Reinvestment Act (ARRA) funds quickly, D-B is attractive because the full constructed price can be contracted immediately, rather than solely a design fee. Also, some studiesÂ¹ show that facilities procured this way can have lower first cost, relative to similar facilities procured under traditional methods.

Other advantages cited include reduced conflict during the construction phase. Much of the conflict on traditional projects stems from disputes between the owner's designer and the general contractor. With D-B, these parties have a common interest due to contract structure thus minimizing conflicts or at least keeping them out of sight of the owner. Additionally, the owner interacts with a single point-of-contact reducing the amount of time spent mediating disputes. This sole point-of-contact can also be an advantage when disputes arise regarding warranties and the performance of the building. With D-B, clearly the responsibility falls on the combined entity to resolve design flaws or faulty installation. The number of change orders can also be reduced as the impact of errors and omissions, and lack of coordination, can be minimized.

D-B also is one of the earliest forms of Integrated Project Delivery (IPD), and some of the advantages of IPD are relevant - for example, the product knowledge imbedded in the specialist subcontractor and supplier community is often more current than that of the designers. This benefits the owner by providing the latest technology in the industry. Early subcontractor involvement can lead to a more integrated design solution, resulting in fewer conflicts on site.

The cautionary aspects

As evidenced by the growth of D-B, it is an attractive way to get a project built quickly, however

there are drawbacks that should be considered. One key concern that arises frequently is the lack of checks and balances. D-B eliminates the owner's contractually-designated advocate, or even an independent professional, who oversees compliance of the actual construction with the contract documents. Similarly, who is responsible for determining practical completion? The issuance of an occupancy certificate may be the contractual building delivery date, but that does not prove the building meets the owner's stated requirements.

Inevitably, the biggest complaint about D-B projects is the potential for a lower-quality final product, which may lead to the perceived first cost savings cited by the studies referenced earlier. This issue starts with the basis of design-builder selection. Typically, bidders receive an outline performance specification, sometimes with concept sketches, that purposefully contains minimal detail to encourage creativity. The owner selects from various proposed design solutions, and if all comply with the minimum specification requirements, then the owner chooses the lowest bidder. Using this methodology, is there a way to really determine comparable quality levels or measure aesthetics, building presence, attractiveness to tenants, student performance or guest experience in a hotel? Aesthetics may not be an issue in industrial projects, where the building primarily exists to house process equipment, however performance of the building surely will be i.e. energy usage, water-tightness, worker productivity, etc. A further, critical consideration when comparing competing solutions is life cycle cost versus first cost. The performance under wear-and-tear of one material selection may come with a very different first cost than another. Energy performance of various mechanical and electrical systems may be drastically different but be worth a higher first cost. As the vast majority of D-B teams are contractor-led for contractual and bonding issues, it is only natural to expect the design to be heavily influenced by the budget, but this is often to the detriment of performance, life cycle cost, interest or appearance. This leads us to question who determines "best value."

Further, with the recent spate of D-B solicitations and the reduction in traditional design-bid-build opportunities, many D-B teams are hastily assembled to respond to a solicitation, or even forced together by an owner in a form of shotgun marriage to create that single point-of-contact. This can only lead to issues down the road, as both parties will likely have very different business models. If they have not worked on the same team before there is little time to develop an organization or values plan that fits with both business needs. Many of these will not be readily apparent to the owner, but will manifest themselves in a poorly executed facility that does not meet anyone's expectations.

Finally, the owner is also faced with a significant loss of control over the direction of the project and will not have access to the same level of information typically provided through traditional delivery methods. Due to some prevalent contract language, the owner may also be more liable for faulty design from approving design submissions, should the building fail to meet the performance specified.

Where to go from here

In summary, at the outset of a project, an owner must prioritize its goals in order to choose the best delivery method.

When considering D-B as a delivery method, the owner needs to recognize that the design professional is no longer protecting its interests from runaway costs or faulty construction. To mitigate problems, the owner can retain a project management firm or employ a talented, experienced in-house team to represent its interests, but regardless of how it is managed, careful

consideration needs to be given to:

* Drafting of the bidding and contract documents;
* Creation of the performance criteria;
* Roles and responsibilities of all parties on the project;
* Oversight of the project costs;
* On-going monitoring of the quality of the work; and
* Final acceptance of the building.

Only then will results equal expectations.

Â¹ Victor Sandivo & Mark Konchar, Selecting Project Delivery Systems, The Project Delivery Institute, 1999; Design-Build 101: Basics of Integrated Service Delivery, DBIA/AIA 1998; et al.

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