



## Why Design Build?

Peter Beck discusses the approach that delivers faster, higher-quality and more cost-effective results.

Design-Build is rapidly becoming the preferred form of project delivery. The Design Build Institute of America projects that the design-build method will be used on at least 50 percent of all non-residential construction projects in the US by the year 2015. Interestingly, this technique is becoming widely used for all project types...large and small, complex and simple, public and private.

The argument for design-build is compelling. In a study performed by Pennsylvania State University in conjunction with the Construction Industry Institute (CII) covering 351 projects in 37 states, researchers statistically proved that the design-build method reduced total project costs by 6 percent and 4.5 percent as compared to design-bid-build and CM-at-Risk, respectively. Cost creep (or change orders) on projects improved by 5.2 percent over design-bid-build and 12.6 percent over CM at Risk. And most importantly, the total delivery time for design-build resulted in improvements of 33 percent and 23 percent as compared to the other two methods, respectively. These are significant results!!

What's happening here? Just as the automobile industry learned in the 1970's, holding a multi-disciplinary team contractually accountable, with an appropriate amount of delegated authority, for all aspects of a project's success motivates the combined disciplines to innovate better solutions. Some of the benefits derived from such collective accountability include:

1. Greater and more accurate subcontractor and supplier input is incorporated much earlier in the design process.
2. The team is motivated to invest more effort in planning the project than the respective disciplines could possibly justify working under independent contracts, resulting in significantly higher value for each dollar spent.
3. Less time is wasted assigning responsibility for inevitable problems or protecting individual profits since the team is collectively responsible by contract.

In the automobile industry, prototyping a new model is analogous to designing and building a new building in that a variety of disciplines (manufacturing, design, engineering, etc.) must team together to produce a one-off product involving many suppliers. As manufacturers moved from a departmental approach (like our CM-at-Risk process) to a "platform" approach consisting of multidisciplinary teams, sharing joint responsibility for a model's success, the average time for prototyping fell from six years in the 1970's to about 14 months today, with commensurate savings in costs.

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The most common objection to design-build is the fear that the owner's representative will lose control by delegating too much or suffer from compromises between design and construction...commonly referred to as the "fox in the henhouse" syndrome. In reality, the owner's representative must be actively engaged in all aspects of a design-build project. Their role simply changes from one of mediating problems between disciplines to exploring and analyzing options to improve value for the user. Any significant tradeoffs between design and costs are clearly understood by all team members if an appropriate contract is used. Ultimately, with a good performance specification, the design-build team becomes responsible (instead of the owner) for the functionality of the building, which is often the most difficult aspect to get right (HVAC, fire suppression, electrical, etc.). Some owner's representatives initially engage an independent consultant to monitor design and construction until they become comfortable with the process and learn to rely on the professionalism of the team they have selected.

This brings us to a critical point. Selecting the right team is absolutely essential to the success of any project...particularly in design-



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build! The team must demonstrate the following characteristics:

1. Substantial prior experience in working together either in the same firm or at least on multiple projects
2. An ability to celebrate the tension between design and budget. Too many design-build projects look as if they were designed by the contractor. Before selecting your team, ask questions. How many AIA awards have the firms that you may team together actually won together? Look at their work. A competent team understands that initial project estimates must exceed the budget in order to create the tension and prioritization of key design characteristics to create the very best design for the budget.
3. Finally, each team member must convey a deep understanding of the processes and challenges of the other disciplines on the team gained through experience in working together for many years

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There are many paths a firm can take to move toward a design-build mindset. At Beck, we've chosen to integrate internally, which allows us to share a deeper level of knowledge across disciplines on a continuous basis.

Additionally, we have been able to invest in innovative improvements, including object-based and intelligent design technologies, which no design-build project team could justify a return on from a single project. Consequently, we bring a rich knowledge of how to organize, lead, and manage the design-build process even if we are not both the contractor and architect for a specific, design-build project. We consistently realize schedule and cost improvements on our design-build projects in excess of 15 percent, and are proud of the many design awards that we've received.