

Every marriage — and project — needs a honeymoon

By RANDY TUMINELLO and LISA DAL GALLO

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Some say, "It's not how you start that matters, it's how you finish." And while that may be true to some extent, starting out right isn't a bad idea either. Every marriage needs a honeymoon.

With millions and often billions of dollars at stake, how design and construction projects begin is critically important. Like pouring concrete, the conditions set in the beginning can be a definitive determinant of the eventual outcome. Unfortunately, most construction projects initiated today passively ignore the importance of starting out right because they still rely on traditional methods of contracting that remain inherently adversarial.

Let's face reality. Traditional contracting methods like design-bid-Build and low-bid award requirements have failed. One only has to look to the public sector to find projects that have incurred millions in cost overruns, schedule delays and claims.

Recently at a conference sponsored by one of the construction industry's major professional associations, a high-ranking decision maker for a federal contracting agency was asked how he felt about the design-bid-build process and the requirement to select the lowest bid. His frustrated answer stunned the crowd: "We're looking at ways to change this because we're getting tired of having to do the same projects twice. The process is costing us double what it should otherwise."

Interestingly, his fellow panelists all nodded in agreement.

Technology

Technological breakthroughs such as virtual design and construction (VDC), building information modeling (BIM), and lean construction methods (LEAN) all have the potential to become real game changers. But to leverage their power effectively team collaboration and cohesion is paramount.

Without a mind shift on the operational side and a contract structure that enables a higher level of trust, the value of VDC, BIM and LEAN can never be fully realized.

Traditional methods of contracting do not support the level of collaboration required by these technologies. The underlying structure of the design-bid-build approach intentionally keeps design and construction teams at arm's length. This is based on the premise that the owner's costs are best controlled when contractors bid against one another based on a set of contract documents produced independently by the design team. As a result, the contractor and subcontractors are not engaged until the construction documents are either completed or almost completed. At this point, many of the advantages afforded by VDC, BIM and LEAN are significantly diminished.

Integrated delivery

There are two ways to cut costs on a construction project: Optimizing design and labor efficiencies during construction. Studies have shown that approximately 80 percent of potential savings on a project are achieved during the first 20 percent of the design process because the design outcome is more flexible during the conceptual phase and becomes increasingly less so as design progresses.

Receiving constructability and cost feedback from the contractor and major subcontractors early in the design is key to maximizing any potential savings. Design bid build does not allow early involvement by the contractor and key subcontractors so most, if not all, of these potential savings are lost. And, the opportunity for the construction team to have any real impact on the overall project outcome — ultimate design, meeting sustainability goals, constructability, cost and schedule — has passed.

When design and construction teams are segregated, not only are potential design savings lost, there is also the greater risk of cost escalation during construction. Under traditional methods, such as design-bid-build, the parties don't understand what they are going to build, how they are going to build it or who is going to build it until after the construction documents, bidding and, in most cases, subcontractors' submittals are done. This substantially increases

the need for clarifications and field coordination, which encourages cost overruns, re-design, value engineering, schedule delays and claims.

An integrated delivery process has the opposite effect. By merging the design and construction teams into a cohesive and collaborative team, a more balanced set of perspectives, skills and resources are activated at the right time. Creative design alternatives are evaluated against practical constructability constraints. Design errors and omissions are virtually eliminated. Cost versus value comparisons are made and expedited delivery options are explored early and often.

With more accurate and complete documentation, field coordination is improved and the potential for increased labor efficiency is enhanced. IPD, in tandem with virtual design and construction technologies, can deliver the best of both worlds: cost savings through design optimization and enhanced labor productivity during construction.

Delivery structures that precipitate adversarial relationships come with a heavy price, not only in dollars but in human resources as well. Today's technological advancements present the construction industry with a great opportunity for success. And while it might be a stretch to imagine a "honeymoon" project from start to finish, it's not unreasonable to expect a higher sense of teamwork and mutual respect.

In our next column, we'll look at how these aspirations can become reality.

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