



The Future *of* Construction



IS THERE A DIFFERENT WAY
THAT CONTRACTORS COULD APPROACH
COMPLEX PROJECTS?

IPD might hold
the **KEY**

TO A CHANGE FROM THE PAST.

by Hugh J. Rushing

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While non-farm industries in the U.S. have increased their productivity over 200 percent since 1964, the construction industry's productivity has gone in the opposite direction, falling at a compound rate of about .6 percent annually. In other words, for a dollar of building cost, the cost of labor has increased rather than decreased over the last 46 years.

Dr. Paul Teicholz, professor emeritus at Stanford University, writes, "...The construction industry seriously lags others industries...in applying labor-saving ideas and finding ways to substitute equipment for labor."

Now mired in the worst slump in 80 years, the construction industry continues to be fragmented into competing interests, experts say. Few owners or constructors are willing to risk trying new ideas. Modern technology fails to integrate the design/bid/build process, which means field changes, change orders, and modifications may be the only avenue to

profit on some jobs. The industry spends less on research and development than almost any other—less than one-half of one percent. One wag claims that a Nextel phone and an air nailer are the only innovations in a generation for construction.

But there may be a better way—the use of IPD: Integrated Project Delivery. With roots in Australia and a collaboration between a group of Orlando, Florida, businesses in the mid-1990s, IPD has more constructors exploring its potential benefits. Some are convinced that it would produce gains that far outweigh risks to individual companies.

The simplest definition of IPD is that it seeks to align interests, objectives, and practices between and among the architect, owner, constructor, and key subcontractors. The separate entities agree to come together to work as a single firm in order to speed delivery, lower costs, and reduce litigation, finger pointing, and blame between parties.

Birmingham's Robins & Morton, consistently ranked at or near the top for medical facilities construction in the U.S., is embarking on a unique IPD project in Maine. It's a project that could act as a model for future projects and help reverse construction's decades-long decline in productivity.

MaineGeneral Health has plans nearing approval to build a 226-bed, \$322-million hospital that will consolidate two facilities currently in use. The 617,100-square-foot project in North Augusta, Maine, will incorporate evidence-based design, LEED principles, and Lean design, according to the abstract of MaineGeneral's Certificate of Need application. Robins & Morton has formed a joint venture with HP Cummings of Ware, Massachusetts, to act as constructor on the project. The designers are TRO Jung

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~ John Milbrand, *MaineGeneral construction manager*

Brannen of Boston and SMRT of Portland, Maine.

The first step in the process of forming an IPD team, says Robin Savage, COO of Robins & Morton, was to hire a facilitator. Attorney Howard W. Ashcraft of San Francisco’s Hanson Bridgett firm brought representatives from all the parties together for two days of collaborative talks long before contract documents forming the team were drawn up. “Agreeing on the consensus documents meant that the collaborative effort started before almost anything else did,” Savage says. “Negotiating an agreement isn’t separate from the project but the first of many decisions which have to be made.”

Ashcraft believes that IPD only works when the parties to a project are committed foremost to the project and not to their individual business outcomes. “You need creativity, but fear undercuts creativity by breeding defensiveness,” he explains. “We recommend waivers of liability to reduce the fear of being sued that stifles collaboration. Reduced liability encourages open communication and the creativity necessary to drive the project in innovative directions.”

Ashcraft also points out that IPD is not a document and that traditional contract documents cannot function for IPD projects.

“We can do better in the design and construction industry,” he states.

“It has a huge effect on the U.S. economy, and if we could trim waste and ignite creativity, we could turn these problems into opportunities for our country.”

MaineGeneral had an earlier taste of what collaboration could do while building a cancer treatment center in 2007. A philanthropist challenged the project with a \$2-million gift if MaineGeneral sped up construction in the design/bid/build project. The scheduled 24-month project was completed in 16½ months, according to John Milbrand, MaineGeneral’s construction manager. “Even though the benefits accrued only to MaineGeneral, we got a taste of what it was like to work in a different way,” Milbrand says. The project was within 3 percent of its budget, with 2 percent of that from scope of work increases.

Robert Gambrell, senior vice president of Robins & Morton, notes that IPD isn’t right for every project, nor will it deliver what some have claimed are 30 percent in savings on projects. “The project has to be large enough for all the parties to invest their resources, including time in the collaboration effort, and engage in intense management of the entire process,” Gambrell observes.

Rick Albert, the director of

engineering and plant operations for MaineGeneral, says that IPD puts a halt to problems being thrown “over the fence to somebody else to deal with. Instead of separating out all the functions, you walk through the fence together.”

Some think that IPD is really just a high-level form of Building Information Modeling (BIM). But BIM is not IPD. Rather, BIM is one of the tools that IPD uses to allow everyone involved in the project to work from a single collaborative set of plans, specifications, and requirements.

The collaboration for the MaineGeneral project has an office set up and six people responsible for all the decisions on the project—two representatives from the owner, two from the architect/design team, and two from the construction team. The group is known as the PMT or “project management team.” The PMT and other team members will work out of a co-location office space, allowing the team to proceed in a collaborative manner.

“Fees go into what is called an incentive compensation layer,” explains Savage. “If the collaborative effort pays off, then all parties share the profits. However, these profits remain at risk until the project goals are met.”

The MaineGeneral team is confident that early and frequent

collaboration among major subcontractors as well as with the designers will reduce wasted time and energy as construction gets under way. "Early and collaborative decisions made by the team mean that key subcontractors can plan their work efficiently," says architect Stacey Yeragotelis of TRO Jung Brannen.

Steve Wiley, senior project manager with Robins & Morton, points out that prefabrication off-site can allow for productivity improvements by subcontractors in critically expensive areas. "Not having to work out in Maine's harsh winter climate should increase productivity," Wiley says. Less field labor means fewer productivity losses that occur when one trade's work interferes with another, something not uncommon in complex hospital construction.

Milbrand thinks that IPD will shorten the overall time frame of the project because close work between all parties will produce an overlap of 6 to 10 months between the design and construction phases of the project. "When the owners, designers, constructors, and key subcontractors all work together from the onset of a project, it speeds things up for everyone," he explains. "Sometimes on large, traditionally built projects, you'll see 20 or 30 percent of the time is simply wasted waiting for decisions."

Unlike design/build, where the contractor takes the leading role in the building project, IPD, some experts say, harkens back to the 19th century when the "master builder", a single person, was in charge of design and construction. Today, however, the master builder is the team that includes all the stakeholders in the process: owner, architect, contractor, engineer, and subcontractors. ■

The Five Steps of Integrated Project Delivery*

1.
Conceptualization
by the Project Team:
Owner/Designer/
Constructor
2.
Collaborative Design,
including all members of
team and subcontractors
3.
Implement Documents
that use virtual models, BIM,
and integrated monitoring
4.
Construction with less waste,
few if any change orders,
more off-site modular building
5.
Operate with continue virtual aids
that can reduce owner and tenant costs.

*adapted from materials from Integrated Project Delivery: A Guide ©2007 by AIA