

By Lindsay Minard



Commercial Construction Works Its Way **Back** To **COLLABORATION**

*During the days when the pyramids were under construction, the masterbuilder profession had a revered place in society. The term “masterbuilder” translated into Latin means **architectus**. The **architectus**/masterbuilder of ancient civilizations was the sole authority on a jobsite with total control over the design and construction of the building process; in other words the project delivery method that may be responsible for the pyramids, the miraculous structures that still confound historians, designers and constructors alike, was Design-Build.*

Over time and with the surge of the Renaissance, building design eventually fell into the hands of artists with no construction experience. And so the general contractor emerged in the 19th century, along with the father of modern day architecture, Sir John Soane, who affirmed that design and construction should remain separate entities. By the 20th century, the masterbuilder profession was nearly extinct, replaced by the modern day separation of design and construction where the architect and contractor have essentially no capability to perform the duties of and yet are totally reliant on one another.¹

“Currently, owners, architects and general contractors work together in a triangular relationship with distinct lines drawn between their crafts. This compartmentalization can be attributed to common practice among post-industrial businesses but also reinforced by the limitations of law and insurance requirements. However, as we move forward, it has become increasingly obvious that these practices are inefficient and will inhibit further growth that could occur through collaboration. The triangle would change to a more interconnected relationship and no longer be restricted by reporting lines,” states Chris Gordon, principal of Kishimoto.Gordon.Dalaya Architecture, PC.

Since the days of the masterbuilders, designers and contractors have engaged in an ideological struggle over project control, design-intent, constructability and associated risk. Despite sophisticated tools, technology and professionals, construction project delivery in the 21st century is still more often than not broadly characterized as inefficient, costly, dysfunctional and wrought with mistrust.

“We’ve created a monster in the industry. The traditional process has created adversarial relationships where the architect designs the project and then the contractors fight to win in a bid situation. Sure you can finish a project for the allotted amount if the documents are great, but they rarely are because owners don’t want to pay for them and so the designers have to cut back, producing the best they can. We’re getting paid to compete as a commodity on incomplete documents. The repeat owners of the world realize that if they don’t have a good team they spend more money down the line,” explains Tom Krajewski, DPR Construction, Inc.

The good news is that while history cannot be rewritten, in 2010 the construction industry is putting extra stock into more integrated forms of project delivery that strive to bring designers and contractors back together and restore trust and collaboration in the building process.

The return to Design-Build and the reach for Integrated Project Delivery (IPD) is a steep and slippery slope, particularly considering the collapse of the economy. More owners, designers, engineers and contractors have reached their breaking point with the status quo: the competitive bid, best-man wins approach that is project delivery today. There is hope that the rewards of a quality team, quality process and quality product fostered in a collaborative, transparent environment eventually win in the hearts and wallets of owners and become more characteristic of the individuals and processes that make up the construction industry.

“I believe that the more collaborative methods of project delivery are capable of unlocking benefits to the team that are often more beneficial than low cost. There is the potential for watershed moments with real collaboration; and the potential for better solutions; it’s just difficult to measure sometimes, particularly in advance,” states Peter Hackett, senior vice president, The Peterson Companies.

Where We Are

“Owners, designers and constructors are all victims, contributors and beneficiaries. The stalemate simultaneously is an impasse with divergent convictions as well as the source of protection for each party through a checks-and-balances system that denies undue advantage. This standoff plays itself out with icy clarity during the change-order process.”
Ken Bishop, *ENR*, “Is Integrated Project Delivery a Revolution or Gimmick?”

A Project for Every Delivery Method

Construction projects are unique, with unique owners, circumstances, goals and anticipated outcomes. While some in the industry believe that IPD is the delivery method of the future, it is difficult to imagine one delivery method meeting the needs of all projects.

“I believe there’s still a place for each method depending on the owner and how experienced they are managing projects; and how defined the project is at the early stages. I think they’ll all have a place and continue to exist in some facet in the industry. Design-Bid-Build will always be around because low cost can be the most important factor to some owners; to others its cost certainty and schedule and they go the Design-Build, or Construction Manager route,” contemplates Jeff Nelson, associate and director of marketing and business development, Draper Aden Associates.

There are a slew of delivery methods employed in modern day construction, the most widely used including Design-Bid-Build, Design-Build and some form of Construction Manager; they all have advantages, disadvantages, circumstances and owners for which they are well suited.

After two years of getting beat up by a competitive bid market, many in the industry would like to see Design-Bid-Build fade away; but despite the fact that the players aren’t always playing nice, Design-Bid-Build still offers a process that is controlled by the owner and has the potential to be the most cost effective. Owners will likely always have a soft spot for the clearly defined roles and liabilities asso-

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ciated with what's considered the industry's "traditional" delivery method.

"Design-Bid-Build is not necessarily a function of the present difficult economy. It's tried and true. It works best for normal projects that are not significantly large, complex, technical or on a tight schedule. The greatest benefit of the method is that it offers the owner FLEXIBILITY. We change direction frequently and often that is because of market changes; integrated projects might cost us more money to change our minds," explains Hackett.

In the government sector, Design-Build is continuing to gain ground because the procurement process is simpler, quicker and easier in the long run. The method shines on projects that are time sensitive and have little to no design change, suiting public projects quite well.

"In the public sector, whether it be the GSA or Corps of Engineers, there's a big push towards Design-Build, more so than in the private sector and since there's not a lot going in the private sector, we're seeing a lot of Design-Build," Karl Wolpert, vice president, ColonialWebb Contractors.

The Big Bump in the Road

"The market collapse is the worst possible scenario for IPD. All owners believe they'll be able to buy their project cheaper if they shop it. I have mentioned IPD to a few owners and they ask why they would engage in that when they can buy jobs for so little right now; they're falling prey to the old ways," contemplates Krajewski.

The economic collapse was the proverbial slap in the face to the trend in construction towards more collaborative, transparent, happy-team project delivery. The industry was beginning to understand the benefits of a friendlier, negotiated, collaborative project delivery environment and then BAM—they got thrown into the Coliseum, gladiator style, to fight for their livelihood.

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"When the market was healthier there were creative approaches to project delivery that brought together likeminded, prequalified general contractors and subcontractors with proven track records that created, early on, an environment of trust. In today's hard bid environment you skip all the prequalifications, going straight from contract documents to a bid process to the lowest bid wins; what kind of condition do you think the winner is in at the end of the process?" asks Richard Lee, vice president, KBS, Inc.

For some owners, the opportunities the market is presenting them today are simply too good to pass up for a more collaborative approach. "Owners are looking for the best deals; it's no different than buying a car and that's their frame of mind. People want to shop and ensure that they're getting the best deal. It's hard to pitch Design-Build to an owner with less than one project every five

years; the ramifications don't hit them hard and often enough," says Wolpert.

On the other hand, architects that deal with smaller scale projects and interior build-outs, may be enjoying the trend back towards the traditional method of delivery that keeps their market share firmly intact. "While I value the way Design-Build is being developed today, I find that in some scenarios, services are taken out of our hands and placed in the general contractor's or a third party's hands and we lose that much more control. If the general contractor does not truly assume the liabilities we're handing over, then we're giving up market share but not our share of liability," explains Paul Elgin, owner and principal of Focus: Architecture + Design.

In any case, until the private market turns around for commercial construction, it will be difficult to tell how the industry and its owners really feel about collaborative delivery methods.

Workforce Development Still an Uphill Climb

Constructability is perhaps *the* issue between designers and contractors today. Designers are schooled more so in concepts, theory and technology versus designing a structure that is operational and constructible. "With computers and CAD and the way the design industry has gone, there aren't as many people in the design world that have real world construction experience. The constructability piece is lacking in the design community and that's where I think the Design-Bid-Build has run into trouble because the skill set doesn't exist in the design world like it used to. Having a contractor sitting at the table with the designer on a Design-Build/Design-Assist results in the best end product with less delay and cost overruns," states Wolpert.

Building Information Modeling (BIM) is the game changer in terms of technology that is impacting the industry today and in the future. But while its potential has not been fully real-

ized, proponents and opponents alike agree that the younger and future generations that will be using it as a standard need to understand the flip side of BIM; the real world experience.

“The people we have coordinating our BIM process have to have field knowledge. The engineers without field knowledge won’t be able to draw in BIM accurately because they don’t have hands on experience. We believe BIM makes the craft worker more valuable because we’ve seen the young people with computer backgrounds struggle to grasp the 3-D construction project. There’s potential for a big shift down the line; the engineers will probably be working for the trade contractors in 10 years,” considers Sheldon Shapiro, CEO, Shapiro & Duncan, Inc.

Where We Are Going

Just like a doctor is always looking for a better, faster way to heal; an athlete a better, faster way to win; a President a better, faster way to spread the wealth (ha ha), architects, engineers and constructors are always striving for a better, faster way to safely build a quality product that satisfies the client.

The Government Sets the Pace

While the private sector struggles, the public sector is able to enjoy the fact that everyone wants to build for them; and despite the market, some federal agencies are continuing to favor the collaborative nature of Design-Build, as well as the benefits of BIM.

“There are a significant amount of projects with the federal government and public universities that are Design-Build; I believe there’s a trend that’s headed that way,” Doug Peterson, executive vice president of E.E. Reed Construction L.P.

Government clients seem to have keyed into the fact that team-based approaches lead to fast-paced, successful, cost effective projects. Certain agencies have been able to streamline procurement by going the Design-Build route. “The general contractor hires the architect and in that case it works well for us because they need us for all the classic services we can provide, not just the minimum services needed to get a permit or jurisdictional requirement for our services. It’s a team approach and I think it’s the best mechanism for the end user because it simplifies procurement and is efficient,” explains Elgin.

The GSA has taken notice of the anticipated long-term benefits of BIM as a critical facilities tool for managing a building over its lifespan. “If you’re working on any GSA project of significance it will be a BIM project; same with Corps of Engineers,” affirms Wolpert.

The Argument for IPD

Integrated Project Delivery is the project delivery equivalent of the Holy Grail. In a perfect world, the commercial construction industry and all its clients would trust that each player could work together for the greater good of the project. Reality bites doesn’t it?

Before the market collapse when owners began to focus almost solely on saving money, there was a real surge in the direction of more integrated forms of project delivery, with IPD being the ultimate achievement. While it is best suited for large scale projects that’s use is predetermined and unchangeable, many believe that with BIM inching its way towards the mainstream, the next logical step in project delivery is to fully integrate project teams.

DPR Construction, Inc., a general contracting firm that specializes in highly technical projects such as healthcare facilities and data centers, has built the basis of their business on collaboration. Before IPD had a title and white paper to go with it, DPR realized the power of a team that was willing to give up a bit of control and work for the good of the whole.

“What we’ve been doing has just now started to be called Integrated Project Delivery. We’re now working on our 13th IPD project. IPD takes Design-Build one step further. The team is an open book with costs on the table and an incentive component to the contract. The whole team shares in the risks and rewards. It provides best value and project efficiency,” states Krajewski.

While it can be ascertained that IPD is not a perfect fit for owners looking to get the lowest prices the market can yield, the ideology behind it is sound and once it gains momentum in the industry, its core values of *trust*, *transparency*, *collaboration* and *best value*, will trickle down into the cultures of other project delivery systems.

IPD requires a level of trust that many in the industry see as the future if U.S. construction firms wish to stay competitive with foreign firms. As Europe begins to make its presence known on home soil, it would behoove U.S. contractors to get educated on what some believe will be the standard in project delivery 15 to 20 years down the line. If this market has taught us anything it should be that thinking ahead and preparing for all scenarios is the key to staying competitive.

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“IPD is an essential component to the construction industry’s future. It allows an owner, architect and general contractor to move out of the constructs of the traditional triangular relationship and develop a design collaboratively and simultaneously through BIM. While there are many advantages to the implementation of BIM, there are currently no contracts that allow for this to happen right now. Insurance companies have not decided how to best provide coverage for projects since ownership and responsibility is difficult to determine in such a fluid environment. We, as an industry, still have to figure out how to accept the shared risks and rewards of collaboration. When it does happen though, it will be unstoppable,” states Gordon.

The Game Changer

“In three years, we have gone from using BIM on one project to using it on every project, regardless of requirement. Any method that finds problems on ‘paper’ is better than finding problems in the field. BIM is the real deal; there isn’t something else. It will just become more advanced and refined,” says Shapiro.

Just as computerized drafting was not a huge time saver compared to paper and pencil, like AutoCAD, BIM changes how architects, engineers and contractors tackle their work and deliver their service to their clients.

While larger, more sophisticated companies have been delivering projects using BIM to their larger and more sophisticated clients for quite some time, the technology is still in its inception and has many wary of accepting its future permanence; the software is still quite costly, requires a change in process for designers and contractors and asks owners to see beyond up-front cost towards the efficient end result. Nevertheless, most industry players are beginning to grasp the fact that BIM is not the *next* big thing to start considering, but rather it is here; and it is a certain future.

“I see a point in time where if you’re not working in BIM you’re not working in construction; some argue that we’re already at that point,” contemplates Wolpert. “There will be a shake up in the industry for those who don’t get on board. It may not happen in the quasi-residential side of commercial construction; however, that depends on how LEED advances and what the government does in terms of mandating energy efficiency.”

While the legalities of who owns and maintains the model are still being figured out, eventually project teams all the way down to the manufacturer will be collaborating on one model. The more integrated forms of delivery create a hospitable environment for BIM and thus as it continues its trek to the mainstream, less collaborative methods will need to efficiently incorporate it.

And Beyond

So if BIM is the game changer, what’s next? What the industry should be looking for is more prefabrication modules being created offsite and brought onto the jobsite and greater steps towards figuring out how to write an insurance policy that fits methods like IPD.

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Conclusion

It is unlikely that any of the methods in existence today will become obsolete, as modern culture has created owners and projects that suit nearly all the processes available. However, as new technologies become more appealing to owners and the looming need to compete with international construction giants becomes more apparent; the industry undoubtedly will continue to be steered back to its collaborative roots.

No matter the delivery method, the only real way to solve the trust and inefficiency in commercial construction is for its players to work through the impasse they often find themselves at, stop playing the games and focus on the end product as a team.

“I measure success in terms of client satisfaction, the quality of product, profitability and delivery process. The best projects on which I have worked had a collaborative team. A good team consists of a combination of diverse skills brought together for a single purpose; one gives freely of their talents for the collective good. That cannot be legislated in a contract,” affirms Bill Magruder, senior vice president, Clark Construction Group, LLC.

¹ *The Ancient MasterBuilder, an essay by H. Robert Dinsmore, Jr., president and founding partner of Masterbuilder Fellowship for the Built Environment, Inc.*