



The Growing World of Design-Build

by Paul Trombitas

An overview of North America's growing design-build market and a look at why many project owners are transitioning to this popular project delivery method.



Introduction

In recent years, the use of design-build has grown significantly across various market sectors and geographies, especially in the transportation sector. A method of project delivery whereby the design and construction phases are combined into a single contract—and the designer and contractor work together from the beginning—design-build helps streamline projects by eradicating the need for multiple contracting efforts and promotes a culture of collaboration from the start.

Design-build differs from the traditional design-bid-build approach, whereby project owners outsource the design work to an architectural/engineering firm on a negotiated-price basis and then contract out construction services on a low-bid basis. These and other project delivery systems may not only introduce inefficiencies during the contracting process, but also miss some of the opportunities provided by design-build when implemented correctly, including increased utilization of innovative ideas from the private sector and an overall reduction in the design and construction cycle.

For these and other reasons, a project delivery method that was considered “radical” just 25 years ago today represents nearly half of America’s construction projects (and continues to grow). This paper provides a brief market overview of North America’s growing design-build market, explains why many owners are transitioning to this project delivery method, and provides practical recommendations for engineering and construction (E&C) firms to set themselves up for successful design-build projects.

Where We Are Today

Today, design-build is being used by both private and public sector project owners as a way to keep projects moving forward, on time and within budget—and all with as little friction as possible. According to FMI’s [“2018 Design-Build Utilization”](#) report, the project delivery method will comprise 44% of construction spending between 2018 and 2021, during which time such construction spending will grow by 18% and reach over \$320 billion (Exhibit 1).

Of the various customer segments that use design-build, **manufacturing, highway/street and education will represent the greatest percentage of design-build construction spending over the next three years.** Geographically, the Mountain (6.3%), Pacific (6.1%) and South Atlantic (6.2%) census divisions will yield the highest growth rates between 2018 and 2021.

Owners have traditionally employed design-bid-build as the project delivery method of choice. As owner needs and project demands have changed, owners have increasingly opted to employ alternative delivery methods based on specific project factors. In our research, owners identified “delivery schedule” as the greatest decision factor, followed by their own goals and objectives, both of which are highly influential in project delivery method selection.

Exhibit 1. Design-build construction spending in the assessed segments is anticipated to grow 18% from 2018 to 2021.

Design-build construction put in place (Assessed segments); 2013-2021

Billions of dollars

Source(s): FMI analysis of multiple sources



Source: 2018 FMI/DBIA Design-Build Utilization Study

As design-build's popularity has increased, the educational process associated with this delivery method has also expanded. A sustained emphasis toward educating owners and project stakeholders on the process and benefits associated with design-build, for example, has facilitated continued adoption and greater utilization industrywide. On the public side, increased design-build legislation has further helped push the adoption of such projects. On the private side, owners tend to select design-build for unique and challenging projects that require lots of collaboration.

Overall, owners received significant value from design-build when the approach was employed on larger and more complex projects. These projects allowed for greater opportunity to provide project innovations and subsequent cost savings. In addition to larger and more complex projects, design-build utilization continues to expand into projects of less than \$25 million, as owners continue to learn of the benefits of design-build.

Addressing Design-Build's Key Challenges

The risk-to-reward ratio in construction is among the most unbalanced of any mature industry. That's because the disproportionate downside risks associated with an extremely bad project far outweigh the upside gained from even the most successful projects. At their worst, truly disastrous projects can cost contracting firms and owner/agencies millions of dollars, push their best people to the breaking point, and cause long-term damage to reputations and key relationships. At a minimum, these mishaps can set project schedules back, overrun budgets, alienate business partners and harm customer relationships.

When it comes to project stress, FMI principal Bill Spragins says design-build presents its own set of challenges that revolve around the following:¹

- 1) The differing roles assumed by the parties.
- 2) The number of decisions that must be made simultaneously.
- 3) The increased speed of decision-making associated with compression of the design and construction cycle.

¹ "What to Do When Projects Go Bad. Part 1." FMI Insights. 2017.



With design-build, owners' use of a new alternative delivery system purely for procurement purposes—and without aligning the decision-making/approval processes within the organization to meet the schedule needs—can set up a project for failure. “People within the organization may resist this fundamental shift and proceed the same way they have always operated,” Spragins says. “Or contractors may get sucked into the notion that alternative project delivery will be the Holy Grail of collaboration without thoroughly understanding the owner or organization that they’re working with.”

Misaligned expectations between the owner and design-builder regarding the level of control that the owner's team retains over design decisions can also derail a project. In [FMI's research](#), in some cases design-builders went into the design phase assuming they would have more influence over design decisions than they actually wound up having. This was particularly prevalent with structural issues where calculations, recalculations and constructability approaches were frequently debated.

Other design issues on stressed design-build projects include:

- Design-builders not designing to specific requirements or to other owner specifications, or performing inadequate quality control on packages, which can lead to an abundance of comments and ultimately the rejection of the package(s).
- Not putting an appropriate feedback and resolution process in place. Too many inappropriate comments can add time to the design-build process because designers will be forced to deal with these queries and close them out before documents can be approved for construction.
- Unclear roles for reviewers in the design-build process and the basing of those reviews on preferences versus reviewing to spec. This can negatively impact schedule and budget because design-builders don't typically factor preferences into their budgets or schedule plans.
- Availability of decision-makers from the owner team and third parties (with review responsibilities) at task force meetings/technical work groups or other appropriate forums. “The speed of decision-making requires reviewers to set aside the appropriate review time within set time frames,” says Spragins. “Late comments only cause schedule delays as the contractor is then forced to take a step back from the planned design and construction path.”
- The ability to co-locate the owner and design representatives. Over-the-shoulder reviews between these representatives are paramount to keeping the design on schedule where the designers are still allocated appropriate time to complete their work. On-site representation of designers for critical periods of time during design or construction will positively impact the schedule.



Vetting and Winning Design-Build Opportunities

No one chases the complete commercial or institutional markets anymore; contractors chase market slices. Winning design-build projects all starts with strategy: What slices of the market do you want to target, who are the right customers, what services do they need, and how do these offerings set you apart from the competition? For example, maybe you want to target community colleges that are expanding their campuses or—if you do well with big concrete work—focus on commercial projects that will require parking garages.

“Base your decisions on facts,” FMI managing director Cynthia Paul advises. “Get smart about which market segments are growing, which are cooling off, and which have already peaked. This is not to say you can only chase growing market segments; but it does alter the strategy needed to bust in and win market share.”

FMI uses a “4C model” to illustrate the context of profitable growth (Exhibit 2). Start with the business “climate” that you are operating in (e.g., demographics, per capita income, government regulations, research and development, economic cycles, etc.), and then dig into the changes, expectations and needs of “customers.” Since they’ll be buying your services, find out what criteria owners use to select contractors. Ask them about the “competition” (the third C in the model); find out what competitors are good at and where there are opportunities to improve. The last C in the model is your “company” and what you are truly good at, simply OK at, and where you might lag the best contractors in the market.

“The 4 C’s come together to create the context behind crafting your go-to-market strategy,” Paul says. “Simply put, that strategy identifies which market slice you will pursue, the right customers to get in front of, your ideal projects (i.e., sweet spot) and your market differentiation.”

Exhibit 2. FMI’s 4C Strategy Model



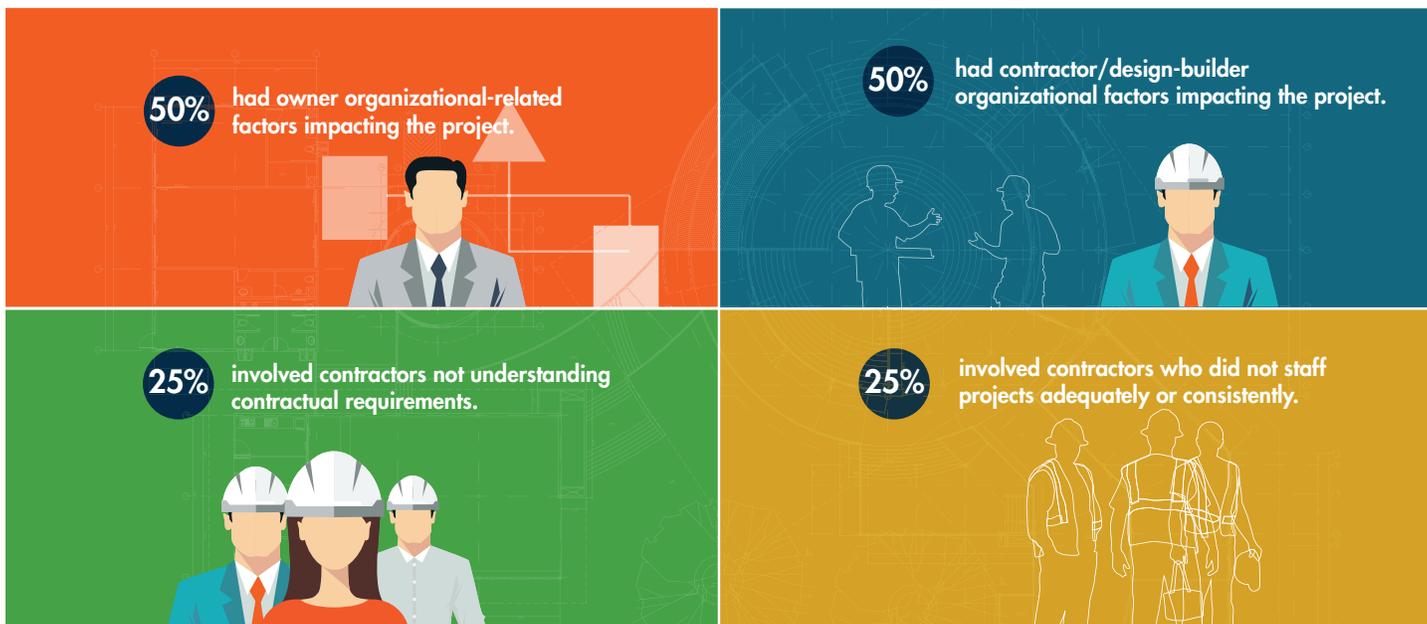


Here are five steps to success that you can use with any project delivery method:

- **Build a compelling story.** You don't have to be 100% differentiated from your competition. The key is identifying things you currently do (or could expand upon) that would create more value for your customers. If you simply match the competition that is already in the market slice, expect heavy price competition from entrenched contractors. "You need a story that explains to customers why you are the right choice for their project," says Paul. "Back up your story with proof that you really can deliver that additional value and guess what: Customers will listen."
- **Build your go-to-market strategy.** This strategy will help you define which customers to target and connect with before an RFP hits the street. This is when they will be the most open to meeting with you and talking to you. You need to get in early and deep to create an advantage to win their project. "Remember, it's in the customer's best interest to have multiple contractors chasing a project," Paul notes. "You don't just want to be a number in the game. Find ways to stand out and add value for your customer, and build your strategy to win around that value proposition."
- **Think like the customer.** What is the same, and what is different from the customer's other projects? What is the project's business purpose? Who are the key end users who need to be included in the decision? What is something the customer has struggled to get other contractors to fully focus on?
- **Find out what the customer wants and why it is so important.** What value do you bring that the competition does not? Value, by definition, is something that a person is willing to spend a little bit extra to obtain. See if you can find something the customer values and then deliver it better than anyone else.
- **Put your time where your strategy is.** Build in organizational capacity that's centered on a key focus, such as spending time with customers in advance. "Everyone is busy today, so even when you do a good job of targeting specific customers, a lot of other things will be vying for your attention," Paul says. "The tactical things we all get caught up in take time away from the strategic moves that are needed to put ourselves in a winning position."

Why throw millions of dollars out the window trying to win design-build bids and customers? Chasing work is a necessary but expensive proposition for contractors, but the firms that get smart about their strategies are generally the most successful and profitable. "Getting smart about your go-to-market strategy," Paul concludes, "picking the right customers and pre-positioning yourself for the win will help set up your company to gain profitable market share without breaking the bank."

Exhibit 3. Most Prevalent Root Causes of Stressed Projects



Source: FMI Partnering Project Database

Aligning With Project Owners and Stakeholders

Even the most promising design-build projects can get sidelined by a few missteps, a couple of bad decisions, misaligned expectations between the parties or any other number of challenges. One way to remove or limit these issues is by having early—and continued—alignment among all project owners and stakeholders. Here, Spragins outlines several key steps that contractors specifically can take to create and cultivate good relationships and communication across these various entities (for the complete list, see [“What To Do When Projects Go Bad, Part II”](#)):

- Assess the owner’s motivations for project delivery system choice and include them in an overall risk assessment. A key question becomes: Has the owner just compressed the schedule but with the same decision-making processes?
- Develop a comprehensive risk register that identifies both insurable and uninsurable risks and mitigate strategies for each. The thinking process a project team goes through in developing a risk register is just as important as the output itself.
- Make sure you completely understand requirements or other bidding assumptions, particularly on design-build projects. Of the projects FMI studied, 25% fell victim to this. At times, even the owner won’t understand the true impact of some of the requirements that are written into the contract.
- Choose your joint venture partners wisely and ensure organizational cross-fertilization among the disciplines to avoid silos of work responsibility or chasms between the field and office staff.
- Make sure there are formal internal hand-off meeting(s) between estimating/preconstruction and project management/field operations. This should include subcontractor involvement in planning the work.

“With design-build, it’s particularly important to pursue projects that are within your organization’s range of experience,” Spragins says, “or hire an individual with the experience in that type of project and who fits the organization’s culture.”



Building Out the Best Project Teams: The P3 Opportunity

With more and more owners seeking out new and innovative delivery methods using state-of-the-art technologies that offer a broad variety of project components, design-build offers greater collaboration among stakeholders in a departure from the linear hard-bid contract.

The most successful design-build projects are built on strong partnerships and alliances among the various owners, contractors, architects and engineers who come together to bring these projects to fruition. For this reason, it's important to choose your joint-venture partners wisely and work diligently at creating internal alignment within the team.

Within the design-build arena, public-private partnerships (P3s) have emerged as a way for public and private sector entities to align on the provision of assets and the delivery of services and then effectively manage that partnership. To build out the most successful P3 project teams, contractors should:

- 1) Build your expertise through strategic joint ventures. Pick your partners carefully. What you learned in previous construction jobs does not necessarily apply to P3s. Start cautiously, educate yourself as you move along, and work with experienced project partners—ideally, trusted partners with whom you've had successful prior experience. When selecting the right partners, the lowest bid is not always the best choice for forming a long-term, win-win relationship.
- 2) Plan comprehensively for project complexities. Be smart about your business decisions. P3s are typically very complex, large-scale projects. Know what to expect of the partnership beforehand and outline expectations and responsibilities at the outset in an extensive, detailed contract. On top of that, a conflict resolution contingency should be on hand to deal with inevitable disputes, whether large or small.
- 3) Understand the cost and risk barriers to entry. You need deep pockets and a thick skin. Due to the magnitude of P3 projects, contractors are often required to provide proof of strong balance sheets and solid bonding capacity. More often than not, the concessionaire will require a large (i.e., financial) parent company to back the performance of the design-build and request very large Letters of Credit (LOCs) as additional performance guarantees of the design-build in order to meet the lender's requirements for backing the deal with debt.
- 4) Be very strategic about the projects (and owners) you go after. Preparing bids can take years and millions of dollars of investment. Therefore, it is paramount to have a deep understanding of the owner's "ecosystem" (What are his budgeting process, timetable and constraints? What does his decision-making process look like? How is the public agency run?) and the viability of the project, which is often dependent on the public and political context.

- 5) Get in the door early. Start building relationships with public officials and finance representatives now. P3s require commitment and support from top public officials who must be actively involved in supporting the concept of P3s and take a leadership role in the development of each given partnership if those partnerships are to succeed.
- 6) Collaborate and innovate. P3 projects are highly complex and collaborative in nature and therefore cannot be run in a silo-type manner. New emerging technologies, as well as owner demands, are pushing design professionals and contractors to work as a cohesive team from the outset, communicating and approaching projects more holistically. As part of this effort, build strategic alliances with reliable partners and develop a deep network of companies that are team players, open-minded and innovative. Additionally, it is crucial that all parties understand and align expectations on the contractual roles and responsibilities of the entities (e.g., the agency, the concessionaire/developer and the design-builder) and staff appropriately to carry out those roles.

Design-Build's Future Looks Bright

On track to account for \$1.19 trillion in construction spending through 2021, design-build presents opportunities and challenges for the E&C industry. With more agencies adopting the design-build model, the future looks bright for this project delivery method. From an industry perspective, alternative project delivery methods have become a more frequent option for both public and private owners. On the public side, growing support for design-build legislation has further increased the use of this delivery model.

Overall, owners indicated receiving significant value from design-build when the delivery method was used on large, complex projects. Experience with design-build was rated highest across all project delivery methods, with 76% reporting very good and excellent experiences, according to FMI's 2018 survey. Opportunities to innovate and the ability to fast-track a project were identified as top benefits associated with design-build. Cumulatively, these projects allowed for greater opportunity to provide project innovations and subsequent cost savings.

In addition to larger and more complex projects, design-build continues to expand into project sizes of less than \$25 million as owners continue to gain exposure to the benefits of the delivery method. As design-build continues to mature and gain in popularity, FMI expects to see even more successful outcomes and high success rates for this extremely collaborative project delivery model.



Paul Trombitas is responsible for conducting primary and secondary market research focused on the built environment. He has conducted numerous research studies, including in-depth market assessments that provide unparalleled insight and understanding of industry dynamics. He can be reached at ptrombitas@fminet.com.



About FMI

For over 65 years, FMI has been the leading **management consulting and investment banking** firm dedicated exclusively to **engineering and construction, infrastructure and the built environment**.

FMI serves all sectors of the industry as a trusted advisor. More than six decades of context, connections and insights lead to transformational outcomes for our clients and the industry.

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of the ENR
Top-400
LARGEST
CONTRACTORS



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Top-200
SPECIALTY
CONTRACTORS



of the ENR
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DESIGN
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