



PROGRESSIVE DESIGN-BUILD

A Design-Build Done Right®
Deeper Dive

PROGRESSIVE DESIGN-BUILD

Background

Design-build has been used for decades, originally in the industrial and process industries (often originally known as EPC or engineer-procure-construct). In executing their design-build projects, experienced Owners typically contract with their design-builders early in the project's life. These Owners not only want to take full advantage of the design-builder's expertise, but also want to work collaboratively with the design-build team to develop a design and implement construction means and methods that meet the project's goals. Recognizing the benefits of having the best team working on their behalf, experienced design-build Owners typically select design-build teams primarily on qualifications and other indications that the selected team will develop the best, most valuable solutions for the design and construction of the project. In progressive design-build, Owners defer

finalizing price, schedule and performance commitments until after the design-build team has been selected and under contract and the design and project risks have been sufficiently defined – enhancing the opportunity for collaboration, teamwork and the likelihood of project success. After award, progressive design-build begins by aligning expectations at the outset before executing the work of design and construction, thus significantly reducing the potential for misaligned expectations for scope, cost and schedule between the Owner and design-builder. Then, the parties collaboratively develop the project expectations and responsibilities as well as the terms of their relationship. As a result of the deep collaboration between all parties, the design-builder's commitments and the final scope, schedule and price are more reliable, and the project goals are more likely to be achieved.

Design-Build Project Delivery

In reviewing this Deeper Dive, keep in mind that “project delivery” is a comprehensive process including planning, programming, design, construction and commissioning. In addition, parties must consider transfer of operations, long-term maintenance and lifecycle costs. When choosing **design-build project delivery**, an Owner can choose from among various approaches for both procurement and contracting. Design-build utilizing a “progressive” procurement and contracting approach is the basis of this document.

Regardless of the design-build approach selected, industry studies¹ have shown that projects delivered through design-build perform far better in terms of cost, quality and schedule than those using design-bid-build and construction management at-risk. Throughout this document, you'll see reference to the term **Design-Build Done Right®**. This refers to design-build performed according to DBIA Best Practices, regardless of the procurement or contract approach.

¹ Revisiting Project Delivery Performance 1998–2018, Molenaar and Franz, CII, Charles Pankow Foundation, University of Colorado, Boulder, University of Florida.

What Is Progressive Design-Build?

One application of design-build delivery is via a collaborative, multi-phased or progressive process (commonly referred to as Progressive Design-Build or PDB). PDB uses primarily a qualifications-based selection, followed by a process whereby the Owner then “progresses” toward a design and contract price with the team (thus the term “Progressive”).

While procurement laws vary for public Owners, some public Owners and all private Owners have the ability to implement a flexible procurement and delivery approach that emphasizes collaboration on the project on scope, schedule and cost as early as feasible.

- The design-builder is retained by the Owner early in the life of the project and, in most cases, before the design has been developed at all.
- The design-builder is selected primarily, if not exclusively, on qualifications and the design-builder’s plan for managing the project. Any cost element in the procurement meets the criteria set forth in the procurement section below and is weighted significantly less than the design-builder’s qualifications and plan.
- The design-builder delivers the project in three phases as described below:

Validation Services. At the beginning of the initial phase of the contract, the parties enter into a validation and program exercise wherein the design-build team collaborates with the Owner and its consultants to verify or validate the project’s program, scope, schedule and budget. In addition, this process includes verifying baseline project requirements such as

geotechnical information, existing conditions, potential issues with permitting, supply chain and other major risks on the project. The purpose of the validation exercise is to gather the best information as early in the project as practicable so that decisions made by the parties are based on the most accurate, reliable information available. The end result of the validation exercise is a realistic estimate of the project budget for a reasonable project scope and within an achievable schedule, all of which takes into account known variables and risks on the project. Once the parties agree on realistic parameters for the project, the validated scope, schedule and budget can then be used with collaborative design and construction tools such as design to budget or pull planning to further the design and schedule and develop an accurate maximum cost in the next phase of the project. Some projects start with fixed program requirements and have a flexible maximum cost, and some

projects have a fixed maximum cost with flexible program requirements. Progressive design-build allows for both situations, provided that either the program needs or the budget are flexible.

Design and Preconstruction Phase. After successful conclusion of the project validation phase, the Owner and design-build team then collaboratively develop the design and other project decisions based on cost, schedule, quality, operability, lifecycle and other considerations. During this phase, the design-builder provides to the Owner real-time, frequent and transparent cost estimates to ensure that the Owner's budgetary requirements are being achieved. The design-builder is also frequently updating the project schedule. At the point in time where the design has been advanced to an appropriate level of definition that aligns with the Owner's requirements, the design-builder will provide a formal proposal (including the overall contract value and project schedule) for the Final Design and Construction Phase services. The proposal is often provided when the design is approximately 40 to 60 percent complete, but it can occur anytime (including as late as 90 to 100 percent design completion), depending on the amount of control the Owner desires to maintain over the design details and the amount of contingency the parties are willing to include in the final contract price. The Owner and design-builder negotiate the terms of the proposal and, depending on the contracting arrangement, the parties either enter into a contract amendment or a second contract to memorialize the terms agreed by the parties. If, for any reason, the parties cannot reach agreement on the final project terms, then the Owner may consider an "off-ramp"

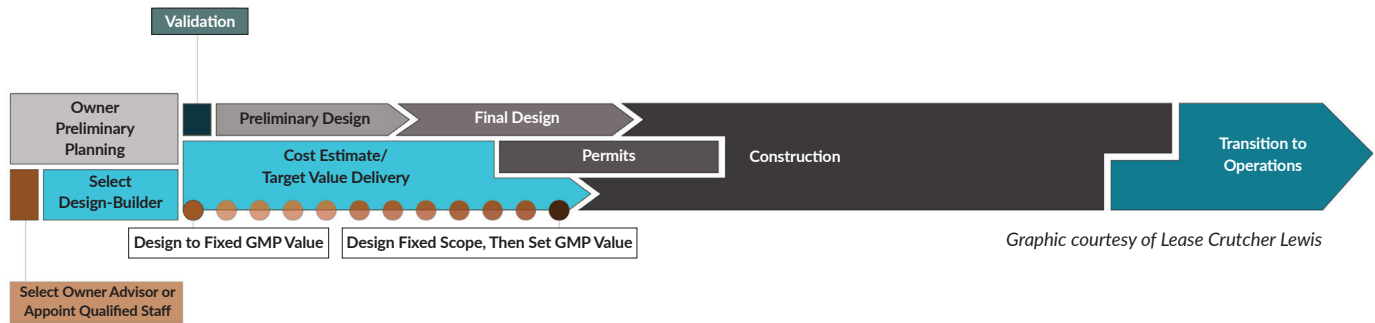
option — where it terminates the relationship with the design-builder and moves forward with the project through another contract strategy. Whether the design and other intellectual property developed during the first two phases can be utilized by the Owner is contingent on the negotiated terms in the initial contract.

Final Design and Construction Phase.

Once the Owner and design-builder agree upon terms of the contract (including the project's price, final scope and schedule), the design-builder will complete the design and construction of the project in accordance with those contract terms. The design-builder will also be responsible for any testing, commissioning and other services that have been agreed upon.

As discussed more later, the parties can enter into separate contracts for each phase of work or a single contract that covers all phases. While there appears to be a "bright line" between the services provided in each phase, the desire to expedite project schedules often require that some work in an earlier phase be started before the design-builder's proposal has been agreed upon. As a result, many PDB projects allow the design-builder to proceed on "early work" packages for discrete elements of the physical work (e.g., procurement of long lead items, demolition or site work) before authorization to proceed with the next phase. Many large and/or complex projects incorporate multiple phases to allow the design-builder to start construction on one portion of the project while the design is still being completed on a separate, segregable portion of the project. The goal is to allow for maximum flexibility within the parameters allowed by the applicable permitting authority.

PROGRESSIVE DESIGN-BUILD



When total contract value can be set:

- *Fixed Budget/Variable Quantity-Quality:
Teams design to budget*
- *Fixed Quantity-Quality/Variable Budget:
Teams design to need, then sets final value*

The PDB Procurement Process

When an Owner decides to utilize progressive design-build, it should have a single fundamental procurement objective – select the right team, using a process that is as streamlined and simple as possible based upon applicable regulations. Who is the right team?

- The team that will work well and collaboratively with the Owner.
- A team that is skilled in the design and construction of similar projects.
- The team that offers the best chance to meet the Owner’s project goals and required outcomes.
- The team that the Owner believes is trustworthy, fair, qualified and transparent.
- The team that provides the greatest “value” to the Owner, with the Owner describing in the procurement what “value” means to them (i.e., cost, schedule, performance, design excellence, etc.).

Progressive design-build procurement can be based solely on non-cost selection factors, such as qualifications and past performance of the team members, key trade partners and key personnel, project approach and creativity

without the evaluation of any cost information whatsoever. However, if required, some Owners include a cost element. The Owner does not seek nor does the design-builder commit to a final contract price at the time of the selection of the design-builder. Rather, the price commitment comes after the parties have agreed upon scope, schedule and other commercial terms. Indeed, it is often the case that the lowest proposed cost element is not necessarily realistic or in the best interest of the project, and Owners need to consider the significant value that a high performing, high functioning design-build team can create for an Owner on a project versus the difference of percent mark-ups. This value creation can be many multiples more than the difference of mark-ups. DBIA acknowledges that many public agencies are required by statute to evaluate price in selecting a design-builder. However, for those agencies that have procurement flexibility, DBIA believes that a pure Qualifications-Based Selection (QBS) process can be a highly effective way of procuring a design-build team and ensuring

project success. Because project scope and parameters are in early development, when a cost element is considered as part of the selection criteria, the cost element should not be fixed and should be:

1. Based on a clear definition and understanding of the cost element as well as limited to aspects that are not dependent on further defining the scope or schedule of the project, such as the profit and home office overhead (not project General Conditions) of the design-builder;
2. Weighted significantly less than the qualifications and approach of the design-build team; and
3. Requested only from short listed offerors and opened after the technical qualifications and approach of the design-build teams are evaluated and ranked.

Any cost element should be in a separate submission from the qualifications/technical proposal and not be evaluated until after the qualifications/technical proposal is evaluated. The cost element should not be used as an evaluation factor in the RFQ/shortlisting process.

There are several procurement decisions an Owner needs to make. One is whether to conduct a one-step or two-step selection process. One-step can be efficient, especially when the scope and scale of the project is

more modest. The Owner should strive to align the amount of effort and information they are requesting in their procurement process with the size and complexity of their project.

Two-step procurement is more typical on complicated or larger scale projects, as proposers will be spending time and resources to respond with more detailed management proposals and Owners must thoroughly evaluate these proposals. The two-step process contemplates the development of a shortlist, largely based on corporate qualifications and past performance, key trade partners and resumés of key personnel. The second step contemplates the submission of management proposals, with the proposal focusing on what the Owner needs to meet its objective of selecting the right team. Proprietary/Interactive meetings are often used in two-step processes. It is an excellent way to have confidential discussions about initial impressions, questions and ideas developed by the proposers and get a sense of how proposers interact and collaborate within their team, as well as with the Owner's team. It also provides the progressive design-build team an opportunity to gather important information to facilitate preparation of a better and more focused proposal. This process represents a strong benefit to both Owner and proposer in consideration of assembling the best team for the project.



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Contract Issues Unique to PDB

Owners start with one of the following contract approaches that are described below:

One Contract: Many Owners use a single design-build contract that includes the entire project and is executed at the start of their relationship with the design-builder. The parties pause at the completion of the Design and Preconstruction Phase when the design-builder submits its proposal and then enter into a contract amendment to move forward with the final design and construction phase. Among other benefits, the one contract approach can make it easier to execute early work packages, as the terms and conditions related to procurement and construction are already covered by the contract. The DBIA forms include two contracts that are suitable for the one contract approach: The DBIA 530, Cost Plus with an Option for a Guaranteed Maximum Price, and the DBIA 544, the Progressive Design-Build Agreement. Both of these contracts utilize the DBIA 535 General Conditions of Contract.

Two Contracts: Some Owners use a two contract approach and start their contractual relationship with the design-builder with a Preliminary Services Agreement which, as the name indicates, covers only the professional services that are included in the Validation and Design and Preconstruction Services Phases. Because the preliminary services agreements only cover the design-builder's professional services, these agreements should not be used for early construction work on the project. Owners who use the two contract approach find that the approach streamlines getting the design-builder under contract. However, it can create significant complications and extended

time to issue a new contract and all new subcontracts for the completion of the project. During the Preliminary Services Agreement, the parties collaboratively develop the scope, schedule, price and other contract terms. The Preliminary Services Agreement ends when the design-builder submits a proposal to the Owner for the remaining project work. The parties then enter into a second agreement to complete the project. DBIA Form 520 is the Standard Form of Preliminary Agreement Between Owner and Design-Builder. If the parties agree on the Design-Builder's Proposal, they would then enter into either the DBIA 525, the Lump Sum Agreement or the DBIA 530, the Agreement for Cost Plus Fee with an Option for a Guaranteed Maximum Price, depending on the decision as to whether to enter into a lump sum or cost plus agreement. Even with a two contract approach, Design-Builders are still the "single point of responsibility" for issues related to the contract.

Form of Contract: Because of the importance of transparency in the development of the scope, schedule and price, the form of the PDB contract is usually a Cost Plus with a Guaranteed Maximum Price ("GMP"). DBIA has two such forms, the DBIA 530 and the DBIA 544. This type of contract is a cost reimbursable contract that describes in detail the costs for which the design-builder is entitled to be reimbursed plus an overhead and profit percentage that is applied to the reimbursable costs. The costs are usually capped with a Guaranteed Maximum Price, which is the maximum amount that the design-builder may be compensated under the contract. Under a Cost Plus with a GMP form contract, the Owner is entitled to

full transparency into all costs and has the right to audit the costs that are submitted for reimbursement. As noted previously, in some contracts, the parties develop the GMP based on the scope of the project. In others, the Owner sets the maximum GMP, and the parties then develop the scope within the GMP. To alleviate the administrative and auditing difficulties of a GMP form of contract, some Owners decide to convert the contract to a lump sum at the conclusion of the Design and Preconstruction Phase. Whatever form of contract is chosen, a so-called “Off Ramp” for the Owner should be included in the event that a GMP cannot be agreed upon. Owners should consult with legal counsel as to the appropriate approach for each project.

Design and Preconstruction Services:

The scope of the preliminary services forms the heart of the PDB relationship. Topics that are commonly addressed in the preliminary services scope include:

- **Scope of work in each Phase, including deliverables.** The contract (often through an exhibit) will specifically state what work the design-builder will perform in each phases, including the validation period as well as the extent and frequency of cost estimating and modeling. It is essential that the parties include the expectations regarding the form and frequency of the deliverables from the design-builder, particularly with respect to Design Submissions and updates to the cost model and schedule.
- **Ability of the design-builder to use and rely upon Owner-furnished information.** Because the design-builder is getting involved early in the design process, there is a question as to how to treat information obtained by the Owner

before the design-builder was involved (like geotechnical reports and technology decisions). As noted above, during the Validation Phase, design-builders verify these reports as well as other information that is reasonably available regarding the project. The parties should work collaboratively to determine extent to which the design-builder should re-do previously performed studies or simply verify the information in the existing studies. The contract should reflect the approach used for Owner-supplied information for the project.

- **Early work packages.** The contract should address the processes for developing and authorizing early work packages. The considerations include procuring subcontractors, evaluating self-performance of the design-builder, and determining how to proceed if the Owner exercises the “off-ramp.”
- **Design-builder self-performance.** The contract will address the applicability of self-performance, particularly in relation to subcontractor procurement requirements.
- **Subcontractor and vendor procurement and their involvement in various phases.** The contract should address how (and when) subcontractors and vendors will be procured and the Owner’s role in that process. This may be heavily influenced by statute. Likewise, the parties need to address the role that these parties may play in Validation and the Design and Preconstruction Services Phases and how this relates, if at all, to their involvement in the Final Design and Construction Phase.
- **Proposal.** The form of the proposal, information that the design-builder is to submit, and timing of submission during

the Design and Preconstruction Phase should be thoroughly addressed in the contract.

- **Off-ramp.** The option for an Owner to consider an “off-ramp” should be clearly addressed, including the rights of the Owner to use intellectual property that is developed during the initial phases of the contract for use with the project. The “off ramp” provisions should also address the ability of the Owner to obtain an assignment of the Validation and Design and Preconstruction Phase subconsultants and subcontractors, particularly those who provide design.

- **Performance and Payment Bonds.** Finally, the parties need to determine the process for obtaining performance and payment bonds from the design-builder. Scope and cost are being established a number of different times — Validation, Design and Preconstruction Phase, early work packages and Final Design and Construction Phase. Often the bond will be provided once construction starts, although some Owners will require a bond at the contract inception and have the penal sum increased as work is added. Parties should consult with legal counsel and bonding consultants on the best way to approach.

Considerations in the Use of PDB

Owners and Design-Build Teams have reported the following reasons for selecting and pursuing PDB:

- PDB procurement allows Owners to focus on the offerors’ qualifications and does not require offerors to submit final designs, costs or schedules during the procurement process.
- PDB procurement is streamlined and usually provides a cost and schedule benefit to both the Owner and the proposers.
- PDB promotes early collaboration between the parties and provides Owners input into significant decisions such as design, material and equipment selection, constructability and sub tier selection prior to a final determination regarding the scope, cost and schedule.
- The flexibility of sub tier selection in PDB afforded greater flexibility in increasing diversity, equity and inclusion.

- The design-builder provides full transparency into the estimating and scheduling process.
- The project can be structured where the Owner establishes a maximum cost at the outset and the design-builder fits the scope to meet the Owner’s maximum cost.

Before deciding to pursue PDB, Owners should carefully consider the potential obstacles to the delivery method:

- Public agencies must have regulatory authority to procure the design-builder without establishing an overall contract price at the outset of the contract.
- Restrictions regarding the selection of subcontractors may limit collaboration and deprive the project of valuable subcontractor input early into the process.
- Owners and stakeholders may not be comfortable with a selection process which does not include competition on the overall design-build contract price.

- Owners may not be comfortable with the likely cost and schedule impacts of exercising the “off-ramp” in the event the parties cannot reach agreement on the design-builder’s proposal. If best practices are followed, including a meaningful validation phase with agreed upon outcomes, team transparency and adherence to project goals, it has been demonstrated that the likelihood of needing an “off-ramp” is greatly diminished.
- Owners must have the capacity and the capability to deliver progressive design-build. Not only does the Owner need to be educated in progressive design-build, there must be experienced professionals and design-builders active in the Owner’s location and in the market.

Preparing to Implement PDB: Helpful Tips

As with all variations of design-build, an Owner should carefully consider what it needs to make the PDB process successful. A few suggestions are as follows:

1. **Assess the appropriateness of PDB for the project.** Owners should internally assess their knowledge of the process and their resources to adequately pursue and execute the project, as well as gain a full understanding of PDB and conduct a proactive/objective assessment of the characteristics of its project and determine if PDB is the procurement and contracting approach for its project.
2. **Understand procurement limitations.** While some public sector Owners have a clear ability to use PDB, many public sector Owners still do not have that authority. Likewise, many Owners are required to comply with statutes that have restrictive provisions regarding subcontractor procurement. It is critical for the Owner to fully appreciate its procurement opportunities and limitations in formulating a procurement plan and engage experienced in-house or outside legal counsel to facilitate.
3. **Establish project parameters.** As with every project, the Owner should do sufficient up front work to ensure that it has an adequate budget for the project and a clear understanding of the project needs and parameters as well as its risks. The Owner should then tailor the procurement to select the team best able to accomplish the project goals and mitigate its risks.
4. **Train Owner personnel.** It is vital that the Owner engage in design-build training in general as well as specific PDB training for both the people who will manage the project and the people who will be making final decisions for the project. Project management personnel need to understand the day-to-day collaborative effort required by PDB. Executives and elected officials who will be approving budgets need to understand when they will be required to approve both the initial contract value as well as the final Contract Price.
5. **Owner Advisor role.** Many first-time and even experienced Owners hire outside consultants who are experienced in PDB to assist with both the procurement and the management of the project. Experienced Owner Advisors can assist Owners in assessing and managing risk, drafting

a balanced procurement and contract, creating a collaborative environment that is fundamental to PDB, reviewing and approving design and other project submittals, developing and reviewing cost estimates, managing construction, commissioning and closeout, among other tasks for which many Owners do not have the skillset or capacity in house. For many Owners, hiring an Owner Advisor is the first step in a successful PDB.

6. **Have a strong cost estimator on your design-build team.** Conceptual cost estimating is an important and difficult skill. The Owner needs to ensure that the design-builder has competent resources in this regard, allowing seamless evaluation of the reasonableness of the design-builder's cost modeling and price proposal.
7. **Make an early decision on subcontractor procurement and design-builder self-performance.** These issues can be major factors in determining whether organizations are interested in competing. Moreover, if the Owner decides that it wants to have most, if not all, subcontractors competitively procured, this issue could influence the ability to obtain collaboration and design innovation, given that subcontractors are often the repository of such knowledge.
8. **Ensure that your team is willing and able to collaborate and trust.** While any form of design-build requires collaboration, flexibility and trust, these factors are often the very essence of why an Owner has chosen PDB. The Owner's team members should understand the importance of collaboration, and senior management needs to ensure that collaboration and integration

is supported and carried out throughout performance of the project delivery process.

As discussed above, the principles of Design-Build Done Right® apply to all variations of design-build, including PDB. PDB is another "tool in the toolbox" for Owners, and, consistent with Design-Build Done Right® principles, the Owner needs to make an informed decision as to which approach is most appropriate for its needs.

Regardless of which approach is used, experience shows that project success is predicated on the parties using the principles expressed in Design-Build Done Right® such as: (a) selecting the most qualified team; (b) letting the design-builder use its ingenuity and experience to develop design solutions; (c) weighting price significantly less important than non-price factors; (d) using incentives to reward superior performance; and (e) seeking best value solutions, such as energy efficiency, durability, sustainability and ease of maintenance.

Design-Build Done Right® teaming philosophies of integration and collaboration, as well as environments based on trust and flexibility – characterized by integrity and honest communication and mutual respect for and appreciation of diverse perspectives and ideas – are also critical to design-build success.

Stated simply, if a project team can operate in accordance with Design-Build Done Right® values, there is a significantly improved likelihood of superior project outcomes under design-build of any variation, including PDB.

DBIA endorses all variations of design-build when done according to best practices and not on a pure low-bid basis. The approach selected depends on the application and needs of the Owner.

**For case studies and photos of award-winning projects
using design-build best practices,
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**Progressive Design-Build:
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