

A More Progressive Approach to Design-Build

Given its multiple benefits, the design-build approach to project delivery continues to grow in popularity, rapidly replacing more traditional contracting methods. Many state and local governments allow public projects to use this integrated, single-source method that continues to evolve in progressive ways that foster greater collaboration, reduce risk and maximize value.



A topic of conversation frequently discussed around public capital projects today is progressive design-build, a concept that is gaining momentum as a preferred project procurement and delivery approach for public and private owners alike.

Like traditional design-build, progressive design-build places start-to-finish responsibility for a project on a single, integrated team. The difference: Progressive design-build engages the design-builder at the earliest possible stages of the project, maximizing value by leveraging the team's experience in early project development, scoping, and quality and budget management. The process streamlines front-end development, reducing procurement time and cost, and leaves the owner in control of the process by providing for off-ramps at discrete project development milestones. The hallmarks of progressive design-build are early integration of the design-build team and a phased approach that advances the project through each step in the project delivery cycle.

By taking a closer look at these phases — from design-builder selection to project development/preconstruction to detailed design and construction — the value of progressive design-build becomes clear.

PREPARING FOR THE PROJECT

Regardless of which project delivery method an owner is contemplating, it is always useful to assess an organization's readiness for a project and the internal resources available to commit to it. In addition to identifying an owner's roles and responsibilities, an organizational assessment should identify an internal leadership team that will champion the project and chosen delivery approach. For organizations with schedule-critical projects and scarce internal resources, progressive design-build can be a strong choice.

DESIGN-BUILDER SELECTION

Most of the significant benefits of progressive design-build project delivery originate in the foundational work completed in the preconstruction phase of a project. To understand these benefits, let's first consider how traditional design-build procurement works.

It typically begins with an owner hiring a consultant to assist in defining the project, developing bridging documents and assisting with the procurement of the design-build team. The drawback to this approach is that it excludes the

design-builder from early project development. Opportunities to add value and streamline the schedule, for example, could be missed.

With progressive design-build, preconstruction begins with the owner identifying project goals and objectives, desired outcomes or output specifications and other critical attributes of the project's structure and organization. At this very early stage, the owner also selects its design-build partner.

Before initiating the selection process, however, the owner should first contemplate and define the key attributes to be sought in a partner. Owners should look for previous design-build, regulatory and permitting experience, as well as an ability to create a collaborative and inclusive working environment. The owner's own prior experience with a potential partner, including the dynamics of their previous interactions, can also be an important consideration. Owners need a team they can trust and with whom they feel comfortable collaborating.

DESIGN-BUILD PARTNER SELECTION

As with traditional design-build, the selected partner in progressive design-build is generally the one that delivers the highest value, as measured by its qualifications and/or a combination of qualifications, cost and noncost factors. Noncost factors include the aforementioned key attributes, along with the design-builder's past success with similar projects, financial stability, claims and litigation history, and demonstrated ability to meet schedule and budget constraints.

With progressive design-build, a guaranteed price for the entire project has not yet been developed, so it is not considered at this stage of the evaluation. Rather, if an owner chooses to include cost in the selection criteria, it is generally limited to the design-builder's cost for delivering preconstruction phase services.

PHASE 1: PRELIMINARY DESIGN AND PRECONSTRUCTION SERVICES

Once a design-build partner is selected, the collaborative and creative processes that will further define the project can begin. Working as an integrated team, the owner's management, engineering and operations staff join the design-build partner in considering technical approaches, treatment processes, process equipment, permitting, constructability, construction means and methods, and preliminary design, all of which factor into the development of the project's guaranteed cost.

To maintain a competitive cost environment, the design-build team will solicit competitive pricing for major subcontracts

and equipment packages. In a transparent, collaborative and open book process, the design-builder and owner evaluate market pricing and make selections using an approach that identifies the greatest value.

In this phase, the owner and design-builder also develop the project's risk profile, identify risk mitigation and management strategies, and allocate project risk to the party most equipped to manage and control it. Cost efficiencies result when the team shares a clear understanding of project risks and employs risk management strategies to reduce contingency and overall costs.

THE PHASE 1 ENDGAME

By the completion of Phase 1, the team not only will have preliminary designs but also have a clear understanding of what is to be constructed, boundary conditions for schedule and budget, and clear expectations for startup, commissioning and warranty management.

Phase 1 culminates with the design-builder tendering a proposal for Phase 2 to complete the detailed design and construction developed by the team. This Phase 2 proposal generally consists of documents that memorialize the project development process and collaborative decisions made by the project team, including basis-of-design documents, preliminary designs, line-item specifications, a detailed construction schedule, proposed contract terms and a guaranteed price to deliver the project.

Unlike conventional design-build, a progressive approach leaves the owner in control by providing a project off-ramp. After the Phase 2 proposal is submitted, the owner can pause and thoroughly evaluate whether the proposal meets its goals and objectives at a competitive price. While rarely exercised, this mechanism allows owners to maintain control of the Phase 2 outcome and overall project direction, with a minimal investment. It also serves as a powerful motivator for the design-builder to perform in a way that meets owner expectations.

PHASE 2: DETAILED DESIGN AND CONSTRUCTION

In Phase 2, the collaborative process resumes. The design-build team moves on to detailed design and construction, acquires construction related permits, secures regulatory approvals, and develops early procurement packages for equipment and materials with long lead times. To accelerate the overall project schedule, the design, design reviews and approvals proceed ahead of construction.

Once construction is underway, collaboration between the owner and design-build team continues. This is particularly

important when the design-build team is working in and around facilities that must maintain operations during construction. Careful coordination and constant communication with operations staff is essential, as is a culture of communication, collaboration and cooperation.

In most cases, Phase 2 continues even after construction is complete. As the single point of project accountability, the design-builder is responsible not only for design and construction but also for confirming the completed facility meets the owner's output requirements. In practical terms, that means the design-builder is responsible for managing the startup, commissioning and performance testing of the completed project. To provide the owner's staff with the tools needed for successful long-term operation and maintenance, many design-builders also offer training and operations assistance following project completion.

THE PROGRESSIVE DESIGN-BUILD DIFFERENCE

Progressive design-build's popularity with owners is growing for many reasons:

Earlier collaboration. The early involvement of the design-builder brings knowledge of systems, constructability, scheduling, estimating, construction markets and resource availability to the table from project onset. This approach can help drive down schedule, cost and risk.

Shorter schedules. Under a progressive design-build approach, a design-builder can typically be procured in 60 days or less. That is because progressive design-build can eliminate the need to develop third-party concepts and bridging documents — ordinarily 30% designs — that are required before the procurement process normally begins.

Reduced risk. Progressive design-build can help reduce risk by being proactive from the beginning. For example, under

a progressive design-build approach, the design-builder is engaged in project development from the outset, effectively and seamlessly transferring design and construction risk from the owner to the design-builder.

Reduced cost/cost escalation hedge. A project with a shorter schedule and reduced risk will inherently cost less. A related benefit to a progressive design-build delivery is the ability to lock in pricing much earlier, which serves as a hedge against cost escalation.

Stronger competition. With some procurement methods, design-builders advance through multiple stage gates — a qualification stage, a technical proposal and a commercial proposal — before reaching final selection. This process requires them to complete designs based on the bridging documents. It also involves tendering a detailed commercial proposal.

When it comes to progressive design-build procurements, the process can be completed quickly and requires less upfront investment, helping to increase competition and market participation.

For public and private owners that seek the benefits of streamlined, lower-investment procurements; high levels of collaboration and team integration; single-source accountability and early identification of ways to reduce cost, schedule and risk, progressive design-build could be an increasingly popular choice.

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