ACEC RESEARCH INSTITUTE

# PROGRESSIVE DESIGN-BUILD

## RECOMMENDATIONS FOR OWNERS AND PDB TEAMS ON EFFECTIVE PROJECT DELIVERY

RESEARCH SUMMARY



IN PARTNERSHIP WITH

DBIA DESIGN-BUILD INSTITUTE OF AMERICA

CHARLES PANKOW FOUNDATION

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# Study Purpose

Progressive Design-Build (PDB) is growing and is generally viewed positively across the industry. This research summary presents the principal findings of a multi-method study on the current state of PDB practice—stronger outcomes depend on disciplined execution of Phase 1 Design and Preconstruction, clear governance, clear commercial terms, and active management of key external constraints. It provides an evidence-based assessment of where PDB is performing well, what distinguishes stronger and weaker project outcomes, and why some projects proceed successfully while others off-ramp before entering Phase 2 Final Design and Construction under an agreed Final Contract Price. The summary focuses on how collaboration is structured, governed, and translated into project alignment. It serves as a standalone briefing for owners, owner advisors, designers, builders, and other industry stakeholders and synthesizes the most important evidence from the comprehensive study and emphasizes the findings with the strongest practical implications.

# Research Approach and Evidence Base

The study used multiple sources of evidence to examine PDB from firm-level, project-level, and case-based perspectives. Research surveys were distributed to a broad cross-section of industry participants, including owners, owner advisors, design-builders, architects, engineers, and specialty contractors across major sectors. At the firm level, the study analyzed 581 survey responses representing 439 firms. The respondent profile was led by Design-Builders (58%), followed by Trade Partners (30%), and Owners (12%). These counts are different from the 239 projects in the project-level survey because the two datasets use different units of analysis: the firm-level survey reflects responses from individuals representing firms, whereas the project-level survey captures information on specific projects.

At the project level, the study analyzed 239 projects. This dataset includes 129 completed projects and 110 in-progress projects, of which 32 were off-ramped (i.e., did not proceed into Phase 2 under an agreed Final Contract Price). The sample covered major sectors, especially Buildings (120 projects), Transportation (61), and Water/Wastewater (58), and was weighted strongly toward the public sector (203 public and 36 private projects). This project-level evidence shows current PDB structures and implementation across sectors, owner types, and project conditions.

The study also includes comparative interviews with project teams on completed projects and separately on off-ramped projects. The project case interviews were selected through the project data and examined in greater depth to understand the practices, decisions, and conditions associated with stronger, weaker, and off-ramped outcomes. These categories reflect overall project performance based on interview evidence regarding alignment, delivery experience, and project outcomes, rather than a single metric such as cost or schedule alone.

Off-ramped projects were treated as a distinct outcome category in which the parties did not reach alignment on design, schedule, commercial terms, and/or contract price sufficient to proceed into Phase 2. Steering Committee input was used throughout the study to strengthen industry relevance and keep the questions, instruments, and interpretation grounded in current practice.

Together, these evidence streams provide a stronger basis for understanding PDB practice than a single survey or a limited interview set alone. The research design integrates broad market patterns, project-level characteristics, and case-based practitioner experience to produce the final results and recommendations.

## What is PDB?

Progressive Design-Build is a project delivery method in which the owner selects a Design-Builder early, typically through a qualifications-based process, and then works with that Design-Builder after award to progressively develop the design, align scope, schedule, risk, and commercial terms, and move toward the Final Contract Price. Instead of requiring a full price commitment at the time of selection, PDB allows the parties to refine the project, test assumptions, identify, evaluate, and allocate risks, and assess feasibility before establishing the Final Contract Price and proceeding into construction.

As shown in Figure 1, PDB generally consists of two phases. The first is the Phase 1 Design and Preconstruction, during which the owner and design-builder collaboratively advance the design, refine the scope, evaluate cost and schedule, identify and allocate risks, and establish the project's technical basis, Final Contract Price, and other commercial terms. The second is Phase 2 Final Design and Construction, which begins after the parties reach an agreement on the project's technical basis, Final Contract Price, and other commercial terms. This structure distinguishes PDB from other delivery approaches by making Phase 1 Design and Preconstruction the central mechanism for alignment before final commitment.

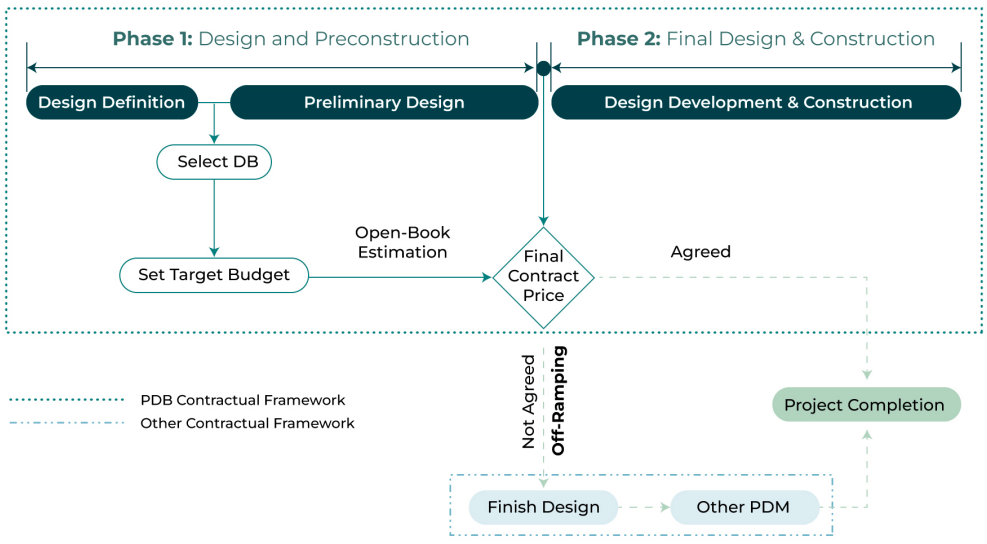


***Figure 1.*** *Two-Phase Structure of Progressive Design-Build*[1]

[1] Gransberg, D. D., and K. R. Molenaar. 2019. *"Critical Comparison of Progressive Design-Build and Construction Manager/General Contractor Project Delivery Methods."* Transportation Research Record: Journal of the Transportation Research Board.

## State of Practice: PDB Is Growing, but Adoption Remains Uneven

The firm-level findings show that PDB continues to gain traction across the industry. Among respondents with PDB experience, 88% reported an increase in the number of PDB projects over the last five years, 81% reported an increase in project value, and 79% reported overall satisfaction with the project delivery method. These findings show that PDB use is increasing with generally positive industry sentiment.[2]

Respondents also viewed PDB favorably relative to other delivery methods on risk and insurance-related considerations, as shown in Figure 2. This is an important finding because pricing predictability, the ability to reach an agreed Final Contract Price, risk allocation, insurance, and commercial alignment remain persistent challenges in project delivery. The firm-level evidence indicates that industry participants see PDB as a comparatively favorable environment for managing these issues.

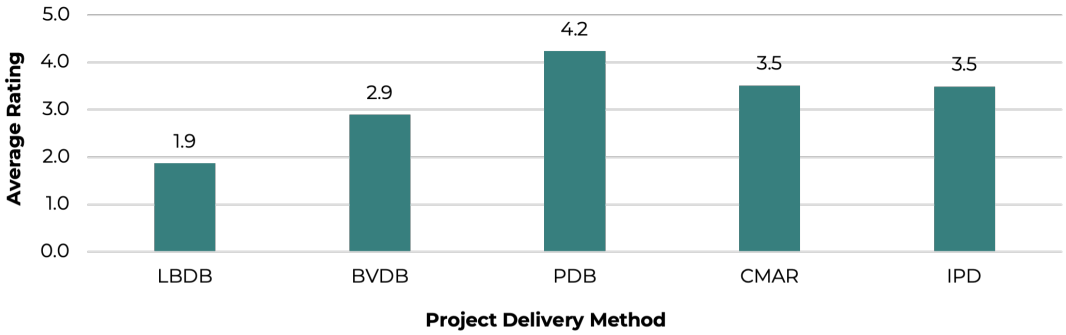


***Figure 2.*** *Comparative Ratings of Project Delivery Methods on Risk-Related Considerations (1 = Very Low, 5 = Very High)*

As noted earlier, PDB is viewed very favorably among project stakeholders, but adoption remains uneven. Within the study sample, PDB activity was concentrated in public-sector projects and was most frequently represented by building projects, although this distribution reflects project counts rather than project size or value. Firms also report recurring barriers to broader adoption, including uneven owner familiarity with the method, procurement and regulatory constraints, limited market opportunity in some regions, and internal organizational readiness challenges. PDB is growing, but that growth is occurring across multiple markets that are still adapting to the method.

[2] Alazzam, M.*, Celoza, A., and Molenaar, K. 2025. *"Progressive Design-Build: Practice, Perception, and Potential."* ACEC Research Institute. **https://www.acec.org/resource/progressive-design-build-practiceperceptions-and-potential/**

## What Project-Level Data Shows About Current Practice

> *Progressive Design-Build fosters great collaboration in the team. It creates one point of accountability for owners. It provides great opportunities for clients to know the cost as the design progresses and collaborates on risk, early packages, schedules, etc.*
>
> **— OWNER'S REP**

The project-level survey provides a clearer picture of PDB practice within the study sample. The findings show that PDB is being applied across a broad range of project types and sizes, durations, and sectors, rather than through a single standard commercial or procedural model. Within the full 239-project sample, the project mix is led by buildings, followed by transportation and water/wastewater. The strong public-sector weighting indicates that much of today's PDB practice occurs in public-owner environments. This matters because public-sector procurement regulations, funding structures, and approval processes often shape how PDB is implemented and where its challenges arise.

Within the completed project subset (n = 113), procurement of the design-build team was primarily qualification-focused. Most projects were procured either through qualifications together with fee/price considerations (57 projects) or through qualifications-based selection alone (40 projects), while relatively few used single-source procurement (11 projects) or fees/price-only selection (5 projects). This is an important finding because it indicates that completed PDB projects in this sample were typically awarded through approaches that prioritized qualifications and team capability over price competition.

The data collection also shows meaningful variation in project structures across phases. Formal partnering agreements were used in many projects, but not consistently: 47 projects reported partnering in Phase 1 and 13 in Phase 2, while 41 reported no formal partnering agreement. These patterns further indicate that PDB practice in this sample was not governed by a single standard implementation model.

Compensation structures also differed between Phase 1 Design and Preconstruction and Phase 2 Final Design and Construction. In the completed-project subset, Phase 1 compensation was distributed across cost-plus (n = 19), cost-plus with GMP (n = 48), and lump sum (n = 46) structures. In Phase 2, the distribution shifted more clearly toward cost-plus with GMP (n = 69), while lump sum (n = 39) remained common and cost-plus (n = 5) became much less common, as shown in Table 1. This distinction refers to how compensation was structured across phases, not to whether the Final Contract Price was established before Phase 2. These results show that PDB is not commercially uniform. Owners and teams are using different pricing pathways depending on project conditions, owner preferences, and risk posture.

**Table 1.** Phase 1 and Phase 2 Pricing Strategy in Completed Non-Off-Ramped Projects

| Pricing Strategy | Phase 1 | Phase 2 |
|---|---|---|
| Cost-Plus with GMP | 42% | 61% |
| Lump Sum | 41% | 35% |
| Cost Plus | 17% | 4% |

> *This process vetted the teams and their members well, allowing later issues that were challenges to be dealt with more easily.*
>
> **— DESIGN/BUILDER**

Project size and duration are also broadly distributed across the completed-project sample. The projects span all three reported size categories, with representation below $15 million, between $15 million and $70 million, and above $70 million. Duration is similarly distributed across shorter, medium, and longer timelines. Together, these patterns indicate that the findings are informed by projects of differing scale and duration rather than by a single project profile.

An examination of traditional cost and schedule performance for the completed project provides important context for the qualitative findings that follow. Based on the available paired initial and final values, the sample generally performed well on conventional outcome metrics, particularly on schedule: median cost variance was 0.6%, median schedule variance was 0.0%, 49.0% of projects finished at or below initial cost, and 66.7% finished on or ahead of schedule. Together, these results suggest that the completed non-off-ramp projects were not only successful in process terms, but also generally stable in traditional performance terms.

Overall, the project-level evidence shows that PDB is sufficiently established to reveal recognizable patterns, but not so standardized that one commercial or governance model dominates. That variation helps explain why project outcomes differ.

## What Distinguishes Stronger Performing Projects

The interview analysis provides the clearest explanation of what distinguishes stronger project outcomes. Across the stronger comparative cases, three recurring patterns emerged consistently in the interview evidence.

> *[We] must have a solid governance structure that allows [us] to make decisions very quickly.*
>
> **— OWNER**

> *If you have that communication [and understanding] throughout the design process, usually the projects are very successful.*
>
> **— ENGINEER**

1

**Owners and PDB teams treat Phase 1 as a disciplined alignment process**

The strongest completed projects used Phase 1 Design and Preconstruction as the project's primary mechanism for establishing scope, schedule, risk, and commercial agreement. These teams maintained living risk registers, reconciled estimates across key milestones, developed credible baseline schedules, documented scope and basis decisions, and worked transparently through pricing and risk assumptions as the design progressed toward commitment. This process converted uncertainty into clear decision-ready commitments.

This is one of the report's central findings. The value of PDB depends on a disciplined Phase 1 Design and Preconstruction effort before major commitments are locked in. Where that process was rigorous, teams moved into Phase 2, Final Design and Construction with fewer unresolved issues and a clearer understanding of cost, schedule, scope, and risk.

2

**Collaboration was supported by governance**

The stronger cases also showed that collaboration alone was not sufficient. Projects performed best when collaboration was supported by clear governance. This included defined decision authority, disciplined coordination routines, timely issue resolution, and continuity of key personnel. Strong projects created structures that translated collaboration into consistent project action.

This is an important distinction for industry practice. Teams may begin a project with strong relationships and shared intent, but those conditions can deteriorate with weak governance. In the stronger cases, governance supported collaboration through clear escalation pathways, decision discipline, and continuity from Phase 1 Design and Preconstruction into Phase 2 Final Design and Construction.

3

**Key enabling conditions were addressed early**

The stronger completed projects also addressed external and enabling conditions early. These included permitting, utilities, site readiness, third-party approvals, operational constraints, and staffing continuity. Stronger projects identified these issues early, actively monitored them, and incorporated them into planning and decision-making.

Together, these three patterns show that stronger completed projects were defined by discipline in approaching enabling conditions. They used Phase 1 Design and Preconstruction to create alignment, governance to preserve alignment, and early constraint management to protect execution.

## What Weaker Performing Projects Reveal

> *If we can't get through project validation, we don't have a project.*
>
> **— OWNER'S REP**

The weaker completed cases show where PDB performance begins to erode even when a project still reaches completion.

These projects did not typically struggle due to a single technical error or a dramatic breakdown. More often, they struggled because alignment remained incomplete for too long. Common patterns included scope-budget mismatch, inconsistent cost feedback, unclear or slow decision-making, fragmented communication, turnover in key roles without succession planning, and insufficient control over interfaces such as owner-furnished equipment, inspections, or operational turnover.

The weaker projects reinforce an important point: collaboration alone does not guarantee strong outcomes. Projects can begin with a strong initial trajectory and still underperform if governance is weak, commercial expectations remain unclear, or Phase 1 Design and Preconstruction outputs fail to achieve real convergence. In these projects, the problem was not the absence of activity. The problem was that the activity did not produce alignment soon enough.

This finding sharpens how the industry should think about PDB performance. The key issue is whether collaboration produces reliable decisions.

## What Off-Ramped Projects Reveal

The off-ramped project analysis is one of the most distinctive and valuable parts of the study. In this study, off-ramped cases spanned multiple sectors, including transportation, buildings, and water/wastewater, and were concentrated primarily in public-sector projects rather than in a single project type alone. The evidence shows that off-ramping was usually driven not by technical failure alone, but by unresolved feasibility and alignment constraints. Across the off-ramped cases, the most common drivers included:

- Scope-funding mismatch, where project requirements exceeded available or approved funding.
- Market pricing and escalation pressures, which prevented convergence between owner expectations and achievable market cost.
- Commercial and risk-rule misalignment, including unresolved disagreement over the cost of the work, contingency, allowances, or risk ownership.
- Third-party and site-readiness barriers, including permitting, utility coordination, access limitations, and external stakeholder conditions that prevented the project from advancing on a workable basis.

This finding reframes the narrative around off-ramping. In many industry discussions, off-ramping is treated as a failed outcome. The evidence here supports a more nuanced interpretation. In many cases, off-ramping suggested that the Phase 1 Design and Preconstruction functioned as intended by demonstrating that the project could not responsibly proceed under the current scope, budget, commercial terms, or external conditions. within the existing PDB arrangement and therefore could not move into Phase 2 under an agreed Final Contract Price. These results show that off-ramping can be understood as a disciplined outcome of the PDB process rather than simply as a project failure.

This does not mean off-ramping should be treated casually. Rather, it means it should be interpreted carefully. When handled well, off-ramping may preserve value by preventing an unworkable scope and budget, retaining useful Phase 1 work products, supporting re-scoping or re-phasing, and avoiding larger downstream failures.

This finding is especially relevant for owners and teams because it shifts the conversation from avoiding off-ramping at all costs to defining, managing, and learning from off-ramp conditions appropriately.

# Key Takeaway: Disciplined Phase 1 Design and Preconstruction Is the Core Mechanism for PDB Success

Across all components of the study, one conclusion appears repeatedly: Phase 1 Design and Preconstruction is the core mechanism that determines whether PDB performs well. PDB performs best when owners and PDB teams organize and collaborate in a disciplined Phase 1 Design and Preconstruction effort. That means rigorous total project cost estimate development, active risk identification, schedule realism, transparent commercial discussion, clear decision structures, and early management of external constraints.

Where the Phase 1 Design and Preconstruction efforts are disciplined, PDB supports stronger alignment and more stable Phase 2 performance. Where Phase 1 Design and Preconstruction is weak, commercially ambiguous, or insufficiently governed, unresolved uncertainty is more likely to carry forward into later project phases. The practical implication is clear: the central question in PDB is whether collaboration produces usable alignment.

## Priority Recommendations

The report offers many practical lessons, but four priorities stand out most clearly.

PRIORITY 1

**Treat Phase 1 Design and Preconstruction as a formal decision phase**

Owners and PDB teams should treat Phase 1 Design and Preconstruction as the central alignment phase in PDB. They should use it to test feasibility, reconcile estimates, establish schedule credibility, clarify risk ownership, and document scope and fundamental decisions before Phase 2 begins under an agreed Final Contract Price.

## PRIORITY 2

**Establish commercial terms and governance early**

Projects perform better when commercial terms are explicit, and decision authority is clear from the start. Owners and PDB team members should resolve pricing structure, contingency treatment, cost definitions, and risk ownership early enough to support meaningful convergence during Phase 1 Design and Preconstruction.

## PRIORITY 3

**Address enabling conditions before Phase 2**

Owners and PDB teams should surface enabling conditions and manage permitting, utilities, site access, third-party coordination, owner-furnished equipment, and continuity of key personnel early. These issues often shape outcomes as much as technical design or construction issues.

## PRIORITY 4

**Define off-ramp conditions and preserve reusable outputs**

Owners and PDB teams should manage off-ramping options as a productive project decision. Clear decision points, transparent closeout rules, and reusable Phase 1 Design and Preconstruction deliverables improve decision quality on potential off-ramping when owners and PDB teams cannot achieve alignment.

# Implications for Owners and PDB Teams

> *We have a full open-book relationship... they trusted us. We're showing them everything we can, we're not hiding anything.*
>
> **— DESIGN/BUILDER**

For owners, the study shows that effective PDB use requires more than selecting a design-builder and expecting collaboration to emerge on its own. Owners should ensure that decision authority is in place, Phase 1 Design and Preconstruction expectations are clear, commercial terms are explicit, and feasibility questions are addressed early rather than deferred.

For PDB teams, the findings show that Phase 1 Design and Preconstruction outputs should be treated as decision-grade controls rather than informal preconstruction artifacts. Teams should surface nonconvergence early, document assumptions clearly, and maintain continuity and disciplined coordination through the transition into Phase 2.

For the industry more broadly, the findings show that the next stage in advancing PDB is not simply wide-spread adoption. It is a stronger implementation. The industry already recognizes the value of collaboration. The more important task now is strengthening the tools, governance structures, and commercial terms that allow collaboration to produce consistent outcomes in practice.

# Concluding Perspective

This study shows that PDB has become a significant part of current industry practice. Firms report growth and generally positive experience with the method, and project-level evidence shows that PDB use across multiple sectors, project scales, and commercial arrangements.

At the same time, the findings show that the increasing value of PDB resides in how collaboration is structured, governed, and translated into project decisions. Stronger completed projects were distinguished by disciplined Phase 1 Design and Preconstruction, active governance, clear commercial terms, and early management of constraints. Off-ramped projects confirmed what happens when feasibility and alignment cannot be credibly established.

For industry stakeholders, the practical conclusion is straightforward: the next stage in advancing PDB is not simply more use of the project delivery method. It is a stronger execution of the process.

# THANK YOU TO OUR **CONTRIBUTORS**

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