

TRANSPORTATION SECTOR

Design-Build Done Right™

DESIGN-BUILD BEST PRACTICES



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Design-Build Done Right™

A DESIGN-BUILD INSTITUTE OF AMERICA PUBLICATION

The information contained in this document is intended for use with *Design-Build Done Right Universally Applicable Design-Build Best Practices* (hereafter referred to as “Universal Best Practices”) published by the Design-Build Institute of America (DBIA) in February 2014. For a copy of this document, visit <http://www.dbia.org> and go to the “Resources” section.

Like DBIA’s *Universal Best Practices*, this document includes three primary sections:

- (I) Procuring Design-Build Services;
- (II) Contracting for Design-Build Services; and
- (III) Executing the Delivery of Design-Build Projects.

Within each of these three sections, you will find the *Universal Best Practices* and implementing techniques as a baseline. The baseline is then modified in two ways:

- (I) Some slight modifications to the universal implementing techniques.
- (II) New implementing techniques, all of which are intended to address the real-world attributes of the transportation sector.

The modifications are shown in **this bold orange font** to help readers easily see the changes.

The combination of *Universal Best Practices*, market sector best practices and additional considerations are the basis for Design-Build Done Right™ in the transportation sector.

COVER PHOTO CREDITS

Top Row, Left to Right:

ODOT I-71/I-670 Interchange – Columbus Crossroads, Owner: Ohio Department of Transportation, *2014 National Design-Build Honor Award Winner*; **Draper Light Rail Extension**, Owner: Utah Transit Authority, *2014 National Design-Build Honor Award Winner*; **Denver Union Station Transit Improvements**, Owner: Denver Union Station Project Authority, *2014 National Design-Build Honor Award Winner - Project of the Year*

Bottom Row, Left to Right:

Phase 4 Development of the President George Bush Turnpike – Western Extension Design-Build, Owners: North Texas Tollway Authority and HDR Engineering, Inc., *2013 National Design-Build Merit Award Winner*; **San Diego International Airport Green Build Landside Project**, Owner: San Diego County Regional Airport Authority, *2013 National Design-Build Honor Award Winner*; **I-85/Yadkin River Bridge**, Owner: North Carolina Department of Transportation, *2014 National Design-Build Honor Award Winner*



WHAT'S UNIQUE ABOUT THE TRANSPORTATION SECTOR?

The transportation sector has many unique features that are central to the consideration of best practices in the procurement, contracting and execution of any design-build project.

First, most transportation projects involve improvement to a public facility and some level of federal or state funding, and as such they are directly affected by a wide number of federal and state laws and regulations. Unlike other projects, most design-build transportation projects generally have to be evaluated and carefully programmed to identify the reason for the project, which is referred to as the “purpose and need”. This process is tied to perhaps the most significant obligation transportation agencies undertake which is the analysis mandated by the National Environmental Policy Act (NEPA). NEPA requires transportation officials to make project decisions that balance engineering and transportation needs with social, economic, and natural environmental factors, and to obtain a record of decision from the federal agency that has primary responsibility for the project. Agencies may be required to undertake a thorough and complex alternatives analysis prior to the development of the project scope. The NEPA process can be lengthy, and results in project input from the public, businesses, interest groups, and agencies at all levels of government.

Secondly, most transportation projects include performing work within a public right-of-way and many of these projects have to be kept in service while construction is planned and executed. Public safety and convenience of the traveling public may be directly affected and since these projects often span a much larger area than non-transportation projects, this issue becomes a major concern of the users. Some transportation projects are large enough to be located in several local jurisdictions, and some cross state boundaries. Unlike public buildings and other non-transportation infrastructure projects (where the site is generally confined to property already under the ownership or control of the public agency, with relatively minor impacts on the environment), the typical road or transit project requires a much more extensive public approval and environmental review process and involves the need to obtain many different approvals from other agencies, as well as the need to acquire property from multiple sources. As a result of these early studies, analysis and public approvals, transportation agencies have to commit far greater time and resources to program their projects and obtain state and federal authorization of funds. As such, public transportation agencies may be hesitant to depart from prescriptive approaches that have previously served them well in the design-bid-build environment.

Because of the nature of complex public approval and environmental process associated with the typical transportation project, there are a substantial number of stakeholders involved, which can create challenges to effectively using design-build. Right-of-way acquisition, utility relocation and impacts on adjoining businesses all involve the commercial interests of third parties. Likewise, local agencies and citizen groups are highly interested in details about the project scope – such as pedestrian/bicycle bridges and design of transit stations, and are also concerned about impacts on communities and the environment. For major projects, construction activities will likely have a significant effect on the traveling public, with maintenance of traffic during construction becoming a key consideration in project planning. Unlike most other market sectors, design-builders involved on transportation projects must be capable of dealing with these project challenges and the diverse group of stakeholders as they proceed through the design and construction process.

The typical transportation owner is quite different from those in other sectors. State departments of transportation (DOTs) and other state and local transportation agencies have typically been engaged in design and construction for decades. As a result, they are accustomed to procurements based on strict competitive bidding rules and highly prescriptive specifications. They are also used to the agency retaining responsibility for quality assurance and quality control of the project, and controlling means and methods of certain construction elements. Agencies with successful design-build programs have used both lessons learned and best practices to help educate staff on the unique benefits that design-build brings to their program.

If the project is receiving funding from the U.S. Department of Transportation, a plethora of rules will apply – including requirements affecting property acquisition, the procurement process, and contract terms and conditions. These requirements include matters such as implementing affirmative action measures, providing opportunities for participation by disadvantaged business enterprises (DBE), paying prevailing wages, and complying with Buy America rules. Additional state and local criteria and guidelines may apply that equally affect transportation projects, such as analyses of environmental impacts required under state law, approvals required from resource agencies, requirements regarding opportunities for DBEs and small business enterprises (SBE), preferences for local firms and specific pre-established design criteria.

As a result of the numerous requirements that public transportation agencies must navigate, a typical design-build transportation procurement can be fairly prescriptive in terms of design requirements. This is due to a number of factors, including: (a) compliance with NEPA documents on the project design; (b) the nature of the transportation agency, which will generally have robust technical specifications that it wants followed; and (c) concerns over public safety in trying new techniques (e.g., a performance specification on a bridge structure). As a means of reintroducing innovation into the process without losing project control, in design-build, many agencies offer proposers the opportunity to submit Alternative Technical Concepts (ATCs) for pre-approval. The use of confidential ATCs allows agency representatives the chance to consider potential changes to the prescriptive measures in the specifications described in the solicitation documents, and to discuss the concepts with the proposers.

Numerous transportation agencies are embracing the unique benefits of design-build. These agencies are realizing significant savings in schedule, construction costs, improved quality and the benefits of innovative solutions. For agencies with highly restrictive budgets and limited resources, these benefits mean that more improvements are being made to our transportation systems as a result of design-build. Because the benefits are greatly outpacing the costs, many transportation agencies are selecting their most complex projects to be advanced using design-build and they are becoming more and more experienced and comfortable with its use. As a result of the increased use of design-build in transportation, a significant amount of public funds is being saved annually or redirected to advance other projects which otherwise could not be funded. When used effectively, design-build in transportation has incredibly positive benefits to the agencies and its customers, but design-build is most effective when best practices and lessons learned are properly employed.

I. PROCURING DESIGN-BUILD SERVICES

An owner's choices of project delivery system procurement approach and contract methodology strongly influence project results. These choices are among the first decisions an owner makes on a project, and they form the foundation for how the project will be developed, procured and executed, and how the key project stakeholders communicate and relate to each other. In making these choices, it is critical for an owner to consider the particulars and circumstances of each project, including the procurement options available to the owner. After thoroughly considering these issues, an owner should make a strategic decision as to how to take full advantage of the many benefits that are inherent in the design-build process.

DBIA considers the following as three (3) best practices for owners as they make their project delivery and procurement decisions.

1. An owner should conduct a proactive and objective assessment of the unique characteristics of its program/project and its organization before deciding to use design-build.

In furtherance of this practice, the following implementing techniques apply:

- a. Owners should understand the potential benefits, limitations, and attributes of design-build and make an informed decision as to whether the use of design-build will benefit their program/project.
- b. Owners should create an organization that supports the successful procurement and execution of a design-build project, with key personnel (including those advising/representing the owner) educated and trained in, among other things: (a) the procurement, contracting and execution of design-build projects; and (b) the importance of setting expectations and fostering a collaborative relationship among all members of the project team.
- c. Owners should identify and involve key project stakeholders at the early stages of project planning, as stakeholder goals, expectations, challenges, constraints, and priorities should guide all project planning and procurement activities, including the determination and implementation of design excellence and sustainability goals.
- d. Owners should involve senior leadership that is committed to the success of the design-build process, as this will foster a healthy and trusting relationship among the entire project team.

- e. Owners should carefully research and assess current market conditions as they plan their design-build programs, as this will identify potential risks and opportunities. Among the issues to be researched and assessed include: (a) procurement actions that could limit or expand competition; (b) projected labor, material and equipment availability; (c) lessons learned from similar projects; and (d) realism of budget and schedule estimates.
- f. Owners should use a rigorous and equitably-balanced project risk assessment process early in the procurement stage and update/refine the risk assessment as the project proceeds from procurement through project execution.
- g. Owners should understand all procurement constraints imposed or flexibilities afforded by their legislative, regulatory, or internal requirements.
- h. Owners should make an early determination of their programmatic position on conflicts-of-interest policy for design-build procurements, *considering federal, state, and local requirements relating to conflicts, and promptly disclose this policy to the industry that will likely pursue these design-build projects.*
- i. Owners should make an early determination about their expectations for the design-builder's role in the start-up, commissioning and operations of the project and reflect expectations in their procurement approach.
- j. *Owners should evaluate and identify the appropriate parties to acquire right-of-way (ROW) and relocate utilities as part of the project.*
- k. *Owner's should develop ATC guidelines that define the process in which ATCs are reviewed, evaluated and accepted. This is especially important for Owners with limited staff resources. In addition, on significantly large and complex projects, these guidelines can help steer the process productively towards the desired areas of innovation and maximizes the opportunities for the owner to achieve positive results.*

2. An owner should implement a procurement plan that enhances collaboration and other benefits of design-build and is in harmony with the reasons that the owner chose the design-build delivery system.

In furtherance of this practice, the following implementing techniques apply:

- a. Owners should use a procurement process that: (a) focuses heavily on the qualifications of the design-builder and its key team members rather than price; and (b) rewards design-build teams that have a demonstrated history of successfully collaborating on design-build projects.
- b. Owners should use a procurement process that encourages the early participation of key subcontractors and, if applicable, key trade contractors.



Left to Right:
Fairfax County Parkway, Phases I, II and IV, Owner: Virginia Department of Transportation, FHWA Eastern Federal Lands Highway Division, U.S. Department of Transportation, 2013 *Design-Build Merit Award*

I-295 Meadowville Interchange, Owner: Virginia Department of Transportation, Chesterfield County, 2013 *Design-Build Merit Award*

- c. Owners should develop their design-build procurement with the goal of minimizing the use of prescriptive requirements and maximizing the use of performance-based requirements, which will allow the design-build team to meet or exceed the owner's needs through innovation and creativity. **If prescriptive requirements are included, owners should take the design to the minimum level required to obtain major approvals required for project development, and consider other means that encourage design flexibility, such as allowing: (a) shortlisted proposers to propose ATCs; and (b) the design to deviate from the project configuration defined in the preliminary design, within specified parameters.**
- d. Owners should develop realistic project budgets, and provide clarity in their procurement documents about their budgets, including, as applicable: (a) identifying "hard" contract cost/budget ceilings; (b) stating whether target budgets can be exceeded if proposed solutions enhance overall value; and (c) stating whether the owner expects proposers to develop technical proposals that will encompass the entire target budget.
- e. Owners should consider the level of effort required by proposers to develop responsive proposals, and should limit the deliverables sought from proposers to only those needed to differentiate among proposers during the selection process.
- f. Owners who require project-specific technical submittals (e.g., preliminary designs) for evaluating and selecting the design-builder should: (a) use a two-phase procurement process; and (b) limit the requirement for such submittals to the second phase, where the list of proposers has been reduced.
- g. **Owners should take appropriate steps to reduce ROW acquisition risk for the project. The owner should: (a) clearly define the existing ROW boundaries; (b) provide expected dates for owner ROW acquisitions affecting the construction schedule (if the owner will be responsible for the acquisitions); and (c) provide other information enabling the proposers to understand how the ROW acquisition process interrelates with the construction schedule. Owners should be closely involved when ROW acquisition is the responsibility of the design-builder, or when the ROW needed for the project may vary based on the final project design. The owner should clearly specify the scope of the design-builder's responsibilities and identify the procedures that the design-builder must follow with respect to acquisitions. The owner should retain responsibility for paying ROW acquisition costs and costs of relocations so as to reduce contingency that will otherwise be included in the contract price.**
- h. Owners should be actively involved and take appropriate steps to reduce project risks relating to utility relocation, including: (a) developing risk mitigation strategies and evaluating how best to assign risks associated with utility relocation; (b) including, where appropriate from a risk mitigation perspective, an allowance in the contract for utility relocation cost instead of requiring a lump sum; and, to the extent reasonably possible, (c) negotiating and securing, before the RFP is released, agreements with utility owners and stakeholders that establish the parameters for work to be performed by the design-builder. Utility agreements should clearly define divisions of responsibilities and, when work is being performed by the private utility, should include schedule commitments that can be relied upon by the design-builder.



Left to Right:

I-64/Route 15 (Zion Crossroads) Interchange Improvements, Owner: Virginia Department of Transportation, 2015 Design-Build Merit Award

Safe & Sound Design-Build – MoDOT 554, Owner: Missouri Department of Transportation, 2015 Design-Build Merit Award

- i. Owners should meet early with any impacted railroad management team to discuss the project and define scope.
- j. Proposers should be encouraged to submit ATCs that do not compromise project quality or intent, and that allow proposers to provide input to the owner regarding new ideas, innovations or concepts that may not have been reflected in the RFP documents.
- k. Owners should perform an adequate search to identify necessary environmental permits for the project in order to avoid potential permit issues with the RFP conceptual design. If necessary, prior to issuance of the RFP, a risk management strategy tied to the permitting process should be considered.

3. An owner using a competitive design-build procurement that seeks price and technical proposals should: (a) establish clear evaluation and selection processes; (b) ensure that the process is fair, open and transparent; and (c) value both technical concepts and price in the selection process. In furtherance of this practice:

- a. Owners should perform appropriate front-end tasks (e.g., geotechnical investigations, environmental assessments, subsurface utility and other applicable surveys) to enable the owner to: (a) develop a realistic understanding of the project's scope and budget; and (b) furnish proposers with information that they can reasonably rely upon in establishing their price and other commercial decisions.
- b. Owners should appropriately shortlist the number of proposers invited to submit proposals, as this will, among other things, provide the best opportunity for obtaining high quality competition.
- c. Owners should provide shortlisted proposers with a draft design-build contract at the outset of the second phase of procurement, which: (a) provides proposers with an opportunity to suggest modifications during the proposal process; and (b) enables proposers to base their proposals on the final version of the contract.
- d. Owners should conduct confidential meetings with shortlisted proposers prior to the submission of technical and price proposals, as this encourages the open and candid exchange of concepts, concerns, and ideas.
- e. Owners should protect the intellectual property of all proposers and should not disclose such information during the proposal process.
- f. Owners should offer a reasonable stipend to unsuccessful shortlisted proposers when the proposal preparation requires a significant level of effort.
- g. Owners should ensure that their technical and cost proposal evaluation team members are: (a) trained on the particulars of the procurement process; (b) unbiased; and (c) undertake their reviews and evaluations in a manner consistent with the procurement documents.
- h. Owners should ensure that technical review teams do not have access to financial/price proposals until after completion of the scoring of the technical proposals.
- i. Owners should provide unsuccessful proposers with an opportunity to participate in an informative debriefing session.

II. CONTRACTING FOR DESIGN-BUILD SERVICES

The use of fair and clear contracts is fundamental to any delivery process. Because there are some important differences between design-build contracts and those for other delivery systems, it is particularly important for the individuals who administer the design-build procurement and execution to understand the contract's language and its practical application. DBIA also recognizes that the construction industry currently tends to focus on the contract between the owner and design-builder. For design-build to succeed, however, the principles must also be incorporated into the contracts of those sub consultants, subcontractors and major suppliers working within the design-build team.

DBIA considers the following as three (3) best practices in design-build contracting.

1. Contracts used on design-build projects should be fair, balanced and clear, and should promote the collaborative aspects inherent in the design-build process.

In furtherance of this practice, the following implementing techniques apply:

- a. Contracting parties should proactively and cooperatively identify significant project-specific risks and clearly identify in the contract how such risks will be handled.
- b. Contracts should reasonably allocate risks to the party that is best capable of addressing and mitigating the risk.
- c. Contracts should use language that is understandable to those personnel who are administering the project.
- d. Contracts should encourage, rather than hinder, communications among project stakeholders.
- e. Contracts should contain a fair process that facilitates and expedites the review and resolution of potential changes to the contract and adjustments in the contract price and time.
- f. Contracts should contain a dispute resolution process that promotes the prompt identification and resolution of disputes at the lowest possible level of hierarchy within the parties' organizations.

2. The contract between the owner and design-builder should address the unique aspects of the design-build process, including expected standards of care for design services.

In furtherance of this practice, the following implementing techniques apply:

- a. Owners should, consistent with their overall procurement strategy and enabling authority, evaluate and use appropriate contractual incentives that facilitate the alignment of the performance of their design-build teams with the owner's project goals. Incentives that should be considered include schedule, quality, maintenance of traffic, reduced environmental impacts, community relations, utility relocation and solutions that reduce the project's ROW needs.
- b. If the design-builder is expected to meet performance guarantees, the contract should clearly identify such guarantees, and the guarantees should be capable of being measured and reasonably achievable by a design-builder performing its work in a commercially reasonable fashion.
- c. The contract should clearly specify the owner's role during project execution, particularly relative to: (a) the process for the design-builder reporting to and communicating/meeting with the owner; (b) the owner's role in acting upon design and other required submittals; and (c) the owner's role, if any, in Quality Assurance/Quality Control. **Additionally, the contract should clearly specify the respective responsibilities of the owner and design-builder in the areas of design, permitting, ROW, environmental mitigation measures, improvements that will be owned by third parties, and utility relocations.**

- d. The contract should clearly define the role of the designer(s)-of-record and how it/they will communicate with the owner.
- e. The contract should clearly define the commissioning (if any) and project closeout processes, including documentation associated with such processes.
- f. The contract should clearly define the processes and requirements for achieving project milestones, inclusive of substantial completion, final completion and final payment.
- g. The contract should clearly define the rules of engagement with stakeholders that will be involved in project design or construction, including for improvements that will be owned or operated by third parties, utility relocations, and ROW acquisitions. The contract should also identify any other contractors that the owner anticipates will be working on or near the project and define the rules of engagement with those contractors.
- h. The contract language should address risk allocation when unexpected conditions (including subsurface conditions, utilities and hazardous materials) are encountered.
- i. The contract should clearly identify the design-builder's submittal requirements for utility and other third party work, emergency response plan, subsurface utility engineering validation, utility plans and conflict matrix, including record drawing requirements if applicable.
- j. The contract should clearly identify any restrictions placed upon the design-builder's ability to perform work on third party property or facilities, or if time restrictions apply.
- k. The contract should clearly identify the scope of the design-builder's responsibilities for maintenance of traffic (e.g., flagging) and traffic management constraints affecting the construction schedule (e.g., lane closure restrictions, lane rental, maintenance of access, special events).
- l. The contract should clearly establish which party has responsibility for risks associated with: (a) governmental approvals, including permits required for project development; (b) any changes to the existing NEPA documents, including any NEPA re-evaluation; and (c) changes in law and changes in standards.

3. The contracts between the design-builder and its team members should address the unique aspects of the design-build process.

In furtherance of this practice, the following implementing techniques apply:

- a. During the proposal phase, the design-builder should use written teaming agreements with each team member to develop and capture an understanding of their relationship and key commercial aspects of their relationship.
- b. The design-builder and its designer(s) should develop an understanding, at the outset of their relationship, of the key commercial aspects of their relationship, including: (a) the designer's compensation, if any, during the proposal period; (b) the designer's role in reviewing/approving the proposal; (c) the contractual liability of the designer for problems, including delays, during execution; and (d) the designer's right to use project contingency for its execution-related problems, and capture these understandings in the written teaming agreement.
- c. The contract should reflect that designer(s)-of-record are regularly and actively involved throughout the project's execution.
- d. The contract should establish the role and primary responsibilities that each party has relative to the design process.

- e. The contract should ensure that there is a clear understanding as to how the team members will communicate with each other and with the owner, including meetings that each party is expected to attend.
- f. The contract should have a clear and commercially-appropriate “flow-down” of obligations from the prime design-build contract.

III. EXECUTING THE DELIVERY OF DESIGN-BUILD PROJECTS

DBIA recognizes that the best practices associated with the execution of a design-build project are similar to those projects delivered under other systems. It is not the intent of this document to focus on identifying general best practices associated with design, construction or project management. Rather, this document's best practices for project execution focus on unique features of the design-build process, where successful execution is based upon relationships built upon trust, transparency and team integration. Individuals not only need to be competent in their specific areas of responsibility, but they also must understand the design-build process and that success is directly dependent upon the ability of the entire team to work together collaboratively.

DBIA considers the following as four (4) best practices in the execution of a design-build project.

1. All design-build team members should be educated and trained in the design-build process, and be knowledgeable of the differences between design-build and other delivery systems.

In furtherance of this practice, the following implementing techniques apply:

- a. All members of the design-build team must understand that the project's success is dependent on the ability of the team members to work collaboratively and to trust that each member is committed to working in the best interests of the project.
- b. Projects should be staffed with individuals that are educated and experienced in the implementation of design-build best practices, and whose personalities are well-suited to the collaborative nature of the design-build process. **The key personnel and subcontractors proposed by the design-builder during the qualifications stage are critical to delivering a successful project; therefore, the individual and team members should not be changed during the contract period.**
- c. All project teams should have senior leadership committed to the success of their projects and actively supportive of design-build best practices.



Left to Right:

I-485/I-85 Turbine Interchange, Owner: North Carolina Department of Transportation, 2015 Design-Build Merit Award

Akutan Airport Project, Owner: Alaska Department of Transportation and Public Facilities, 2013 Design-Build Honor Award

d. The design-builder should recognize the benefit of including experienced design-build trade contractors on its team.

e. Design-builders should be familiar with the entire NEPA process and its requirements, as this can be a critical factor if the design-builder proposes changes to approved concepts that deviate from the approved NEPA documents.

2. The project team should establish logistics and infrastructure to support integrated project delivery.

In furtherance of this practice, the following implementing techniques apply:

a. Owners and the appropriate members of the design-builder's team should co-locate when justified by project characteristics (e.g., project's complexity and volume of design submittals). This is especially appropriate for large projects and should also consider including third party agencies such as permitting agencies and/or FHWA/FTA.

b. Design-builders should strive to have their design and construction teams working in the same place as often as possible, including co-location if practical.

c. Owners and design-builders should ensure that the administrative processes established for project execution are appropriate, well-understood and expeditious. In particular, owners and design-builders should agree upon a protocol for timely communications between each other, as well as with permitting agencies and other key stakeholders.

3. The project team, at the outset of the project, should establish processes to facilitate timely and effective communication, collaboration, and issue resolution.

In furtherance of this practice, the following implementing techniques apply:

a. The owner and design-builder should develop and use a structured partnering process, scaled appropriately to reflect the project's size and complexity.

b. The owner and design-builder should create an executive leadership group, including individuals from key members of the design-builder's team (e.g. designer(s)-of-record and key subcontractors) to meet regularly, monitor the project's execution, and facilitate the understanding and achievement of the parties' mutual goals.

c. The owner and design-builder should develop processes that enable key stakeholders (e.g., government agencies, utility and property owners, and third-party operators) to interface directly with the design-builder and its design professionals on significant elements of the work. Among the processes that might be considered are the use of special task forces to address issues related to ROW acquisition, utility relocation and environmental permitting that will engage key stakeholders into the process.

d. The owner and design-builder should, at the outset of the project, endorse and liberally use techniques that effectively integrate design and construction activities and take steps to continue these processes throughout the duration of the project.

e. The owner should be fully engaged and prepared to make the timely decisions necessary to facilitate the design-builder's performance, including being represented by staff that has the authority to make decisions and perform its project functions.

f. The design-builder should clearly, thoroughly and expeditiously advise the owner about any issues that might impact the contract price or schedule, as this will, among other things, enable the owner to make an informed decision as to how to address such issues.

- g. All parties involved with environmental compliance should attend project coordination meetings during the design and construction phases.
- h. Design-builders should gain an understanding of the owner's goals and should be aware that compliance with environmental mitigation requirements and other legal requirements (e.g. affirmative action, DBE) are often of critical importance to the owner even though they may not affect the ultimate work product.
- i. The design-builder should identify early action items that will reduce the potential for future delays, including: (a) identifying challenging ROW issues; (b) ordering long lead items; (c) expediting geotechnical and utility investigations; and (d) developing relationships with utility owners and other key stakeholders.

4. The project team should focus on the design management and commissioning/turnover processes and ensure that there is alignment among the team as to how to execute these processes.

In furtherance of this practice, the following implementing techniques apply:

- a. The owner and design-builder should acknowledge the significant level of effort required to manage the development and review of the design and, consequently: (a) dedicate sufficient resources to foster a collaborative environment for this work; and (b) mutually develop a realistic design development plan that efficiently engages the owner and key members of the design-builder's team (e.g., designer(s)-of-record and key subcontractors) in purposeful meetings.
- b. The owner and design-builder should agree upon clear, realistic and expeditious submittal and review/approval processes that are in harmony with the parties' schedule and other project-specific goals.
- c. The design-builder should ensure that design advancement and changes to the contract documents are clearly, thoroughly, and contemporaneously documented, and that there is a clear understanding as to when the owner is integrated into the decision-making process for and notified of such advancement and changes.
- d. The design-builder and its team should: (a) establish a trend system early in the design development process to identify, track and evaluate any potential changes before they adversely impact the project's cost or schedule; (b) clearly, thoroughly, and contemporaneously communicate to the owner the information derived from the trend system; and (c) maintain the trend system throughout the construction process until it is no longer needed.



Left to Right

I-15 Corridor Expansion I-15

CORE, Owner: Utah Department of Transportation, *2013 National Design-Build Award*

Phase 4 Development of the President George Bush Turnpike - Western Extension Design Build, Owners:

North Texas Tollway Authority, HDR Engineering, Inc., *2013 Design-Build Merit Award*



Questions or Comments? Email BestPractices@dbia.org

The term “best practices” itself connotes an evolving process of continuous improvement. DBIA views this document to be the first of what will undoubtedly be many iterations of best practices and implementing techniques. As such, DBIA fully expects that the concepts expressed here will be refined and modified over time.

DBIA is the only organization that defines, teaches and promotes best practices in design-build project delivery. Owners choose design-build to achieve best value while meeting cost, schedule and quality goals.



MISSION:

DBIA promotes the value of design-build project delivery and teaches the effective integration of design and construction services to ensure success for owners and design and construction practitioners.

VISION:

DBIA will be the industry’s preeminent resource for leadership, education, objective expertise and best practices for the successful integrated delivery of capital projects.

VALUES:

- Excellence in integrated design-build project delivery, producing high value outcomes.
- An environment of trust characterized by integrity and honest communication.
- Mutual respect for and appreciation of diverse perspectives and ideas.
- A commitment to innovation and creativity to drive quality, value and sustainability.
- Professionalism, fairness and the highest level of ethical behavior.

DESIGN-BUILD DONE RIGHT™ AND CERTIFICATION

Certification provides the only measurable standard by which to judge an individual's understanding of Design-Build Done Right™.

DBIA certification in design-build project delivery educates owners as well as designers and builders on team-centered approaches to design and construction. Owners want successfully executed design-build projects and are looking for a demonstration of both relevant continuing education and experience – both of which can be gained through DBIA certification.

DBIA offers two types of Certification.



Attaining the DBIA requires from two to six years of hands-on experience of pre and post-award design-build. Credential holders who display "DBIA" after their names come from traditional design and construction backgrounds; they are private or public sector architects, engineers and construction professionals. Some attorneys and academic practitioners who specialize in design and construction generally and design-build specifically may also fulfill the DBIA™ requirements.



Unlike the DBIA credential, obtaining the Assoc. DBIA does not require hands-on field experience. Instead, this credential is focused on three key types of individuals who possess a different type of experience: (1) pre-award professionals focusing on critical aspects of the design-build process such as business development and acquisition/procurement; (2) seasoned professionals who are new to design-build project delivery, but not new to the design and construction industry; and (3) emerging professionals such as recent college graduates with relevant educational background in the AEC industry.

For more information, visit www.dbia.org/certification



SIX TIMES MORE TRANSPORTATION DESIGN-BUILD

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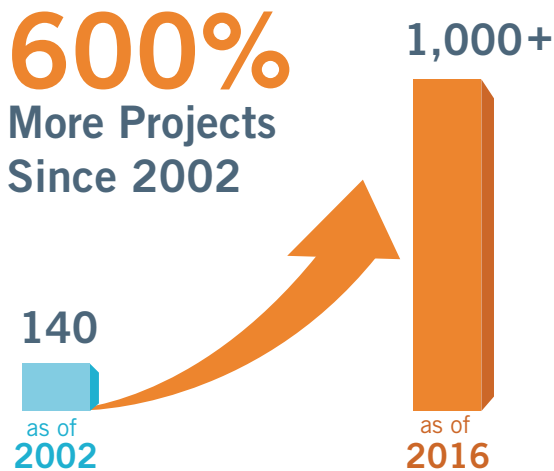
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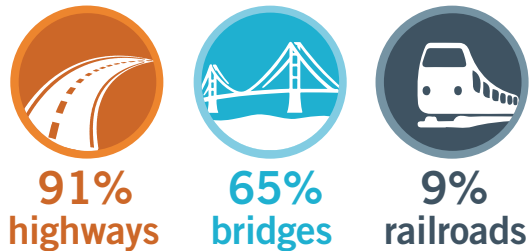
In December 2015, the Design-Build Institute of America (DBIA) began a survey of state DOTs in regard to their design-build programs. The survey developed by DBIA's Transportation Markets Committee examines the extent of design-build use, project types, procurement, best practices and education and training needs.

Those states using design-build are using it on a broad spectrum of project types:

Completed Transportation Design-Build Projects



States use design-build for these project types



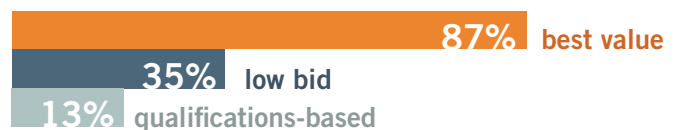
Owners use various selection processes and procurement methods depending on the project, but they favor the best value selection process. In addition, stipends – a DBIA Best Practice – are universally accepted, with 100% of those reporting having used them. However, owners are split evenly on whether to use a set amount, set percentage or a range. The survey results also show a clear desire for improved processes and owner education and training.

DBIA's survey asked state DOT owners how many design-build projects their department had completed. The results show over 1,000 projects - a more than 600% increase from FHWA's 2002 data!

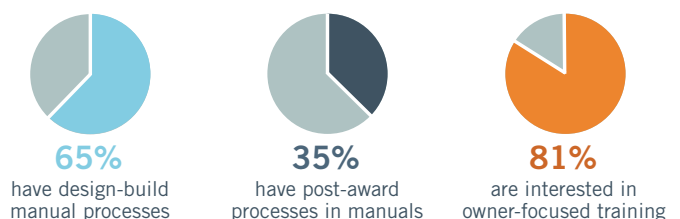
Owners who have used design-build like it; 87% of those who've responded so far said they would use design-build in the future. Of the 13% who are not planning to use design-build in the future, the primary reason is the lack of statutory authority.

Interestingly, the survey results show no major differences between the use of design-build regarding project size.

Selection Processes Owners Use



About Owners





DESIGN-BUILD DONE RIGHT

Transportation Sector

DESIGN-BUILD BEST PRACTICES

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DBIA extends a special thanks to all of the industry leaders who helped shape this document. A special thanks is extended to DBIA's Transportation Markets Committee Thought Leader, James Avitabile, PE, DBIA of RS&H, and the full Transportation Markets Committee, including the Virginia Department of Transportation, Jacksonville Transportation Authority, Maryland Highway Department, Federal Highway Administration, Utah Department of Transportation, and San Mateo County Transit Authority (Sam Trans) representatives who participated in this committee.