

Project Delivery Options

When hiring a team to design and construct a building today, there are many different ways to structure the work. Within the building industry, conventional methods are being challenged by clients and consultants alike in attempts to save time, spend less money, reduce litigation, create less conflict or heighten the building's quality. While minor variations make each working arrangement unique, the major differences fall into one of three categories: traditional methods, construction management and design-build.

Each of these project delivery options—that is, how the various individuals organize their participation and responsibilities to complete a building project—creates certain advantages and potential limitations. In the case of each project, the relative merits of the employable delivery systems must be evaluated. The following summary summarizes, compares and contrasts the three most commonly used project delivery approaches as an aid to evaluating project delivery options.

Option 1: Design-Bid-Build

The most common form of project delivery, design-bid-build, is characterized by its three phases, by its independent contracts between the architect and the owner and the contractor and the owner, and by the linear sequencing of the work. There are three prime players: owner, architect and contractor.

Process: The typical process involves three phases: First, the owner engages the architect to design and prepare construction documents for the project. Second, those documents are used for construction bidding, a contractor is selected and cost commitments made. Third, the owner hires the contractor to build the project.

Use: This method is the conventional one, and is common to all types of undertakings, particularly those initiated by public clients with legal requirements to select a low-bidding contractor. Its principal advantages are: its widespread use and familiarity, the clear roles assigned to each party, the thorough determination of design prior to construction, and its linear process, which is easy for owners to manage. Disadvantages are related to linear phasing: It is considered a lengthy process, the separation of design and construction restricts useful communication, and change orders and delay claims are more likely than other methods.

Option 2: Negotiated Select Team

This delivery option, sometimes called design-assist, has evolved from design-bid-build in which there are separate contracts for design and construction. At the beginning of the project, the Owner selects an architect and a contractor with whom fees are negotiated. The three prime players, owner, architect and contractor, work together cooperatively from very early on in the design process.

Process: The negotiated select team process typically involves three phases. First, the owner selects an architect to design the project and a contractor to build it, each under separate contract. Design and documentation are completed by the architect with input from the contractor, who often provides scheduling, cost estimating, phasing and systems evaluation. Second, when the design is complete, the final

construction cost is negotiated through bids from subcontractors, and third, the contractor builds the project.

Use: This method is common among private-sector projects and those owners, architects and contractors who work together regularly. Its principal advantages are: a cooperative team approach to the process, the availability of construction expertise during the design phase, a reduction in the inherent adversarial relationships between the design and construction professionals and less potential for litigation. The primary disadvantages of using a negotiated selected team are related to its relative informality: Without competitive bidding from the general contractor, owners may question whether they have an economical construction price.

Option 3: Design-Build

Design-build is characterized by having a single point of responsibility for the project. The design-build entity is responsible for both design and construction services under one contract, so there are just two prime players: the owner and the design-builder. In some cases, the design-builder may act as an agent for the owner, where he does not provide all the design or construction services with in-house personnel. In those cases, the necessary design or construction personnel may either be subcontracted by the design-builder or may be contracted directly with the owner.

Process: Once preselection materials have been prepared by the owner, the typical design-build process involves two key steps: design and construction. Design is completed by the architect who is part of the design-build entity. Construction or construction oversight is also the responsibility of the design-builder. An early cost commitment generally is made during the design phase in the form of a guaranteed maximum price.

Use: This method is common for projects that need to move swiftly. It is most effective when the project is clearly defined at the outset but may be relatively complex, requiring extensive coordination of consultants and subcontractors. The principal advantage is that the single point of responsibility minimizes the owner's risk, reduces the likelihood of change orders and reduces construction delays. However, if the design-builder is acting as an agent for the owner and does not hold all the subcontracts for design and construction, then the owner's risk is significantly increased as they become responsible for the performance of every subcontractor.

Other potential disadvantages are the method's complexity (particularly for owners with less experience), the potential for cost-saving strategies to erode design and construction quality, and the lack of direct connection between the owner and the architect. This last disadvantage is not insignificant when the owner is a church, since church design is a very specialized and personalized process that normally requires a very close relationship between the architect and the owner to achieve the most desirable results.

Cost Comparison:

As to the question of comparing the costs of the different approaches, although both Option 1 and Option 3 may have lower initial costs, Option 2 has the greatest potential for maximizing the benefits for the money spent by the owner.

Assuming that the architect hired under Option 1 exercises the appropriate standard of care in developing the construction documents for the project, once the construction contract is awarded, that contract amount, which is presumably within the owner's budget, becomes the guaranteed **minimum** price. Since the contractor was bidding competitively, his margins are probably as low as possible. Therefore, he will not be able to afford to overlook any opportunities for claims for changes or delays. It is not unusual for the final cost of a bid project to be two to five percent higher than the bid, due to legitimate claims for extras for design errors or omissions or field conditions. If the construction documents were poorly prepared, contractor claims could add ten percent or more to the construction cost.

The initial costs with Option 2 consist of the architect's fees, which are essentially the same as with Option 1, plus pre-design fees for the contractor. The contractor's pre-design fee includes compensation for the subcontractor bidding that is normally associated with competitive bidding and included in the contractor's bid in Option 1. Therefore, the additional expenses are those paid solely for the benefit of the contractor's expertise during the design phase. For those additional fees, the owner gains the following advantages:

- ⇒ the benefits of design-build without the contractual disadvantages. Since the owner contracts directly with both parties, they each work in the owner's best interest.
- ⇒ high quality for a defined budget. The architect benefits from the contractor's input during design of the project, from the direct relationship with the owner and from the specific attention paid to design.
- ⇒ a shortened overall project time line because the contractor is involved from the design phase. This reduces time-consuming delay claims and change orders while making fast tracking possible.
- ⇒ fewer disputes between the project personnel. This method shields the architect and contractor against adversarial relationships which, in turn, leads to a smoother project for the owner.
- ⇒ a strong sense of control for the owner, due to the trust between the members of the negotiated select team.

Initial costs are often lowest with Option 3. Since the design-builder is often cost driven, fees for design work are often kept to a minimum through the use of expeditious working methods during design. Although these methods may result in well prepared documents, they may not allow for sufficient involvement of the owner in the design process. This lack of involvement by the owner during the design process may lead to owner-initiated scope changes later on in the design or construction process, which are legitimate bases for change orders. During the design process, the design-builder has little or no incentive to present various options to the owner once a solution that fits within the budget has been developed. This may deprive the owner of options that would better meet their needs, even if they were no more expensive than the original solution. And, finally, in an attempt to meet budgets, the owner may be encouraged to use materials with low initial cost but high maintenance and life-cycle costs.

Ultimately, if the owner's budget is truly fixed, then they will most likely spend all the money that is budgeted for their project, regardless of which project delivery approach they choose. What varies, then, is not how much the project will cost but

rather how much the owner will receive for the money they spent. Our goal is to develop the project so as to stay within the owner's budget and to spend the money budgeted for the project in the manner that best benefits the owner for the duration of their use of the built facility. We know of no better way to do this than with Option 2, the negotiated select team.

Contractor Selection:

Essential to the success of this approach is the selection of the right contractor for the project. Although the owner contracts directly with the contractor, the architect typically assists the owner with the contractor selection process. Each contractor is asked to submit a Statement of Qualifications for the owner's review. This document provides the owner with detailed information about the contractor and their previous experience.

Working with the architect, the owner chooses two or three contractors to submit proposals and to present their qualifications at an interview. These proposals should include information regarding their projected costs for General Conditions (field offices, temporary utilities, insurance, rubbish removal, etc.), project management and supervision, and their proposed fees for pre-design services and construction phase services. Their fee proposals would be based on the following scope of services:

- providing technical information during design;
- providing constructability input to the architect;
- estimating and negotiating cost of construction;
- carrying out materials and systems analyses during design;
- coordinating early purchase of long-lead items;
- obtaining entitlements related to construction, such as building and encroachment permits;
- preparing shop drawings and other documents necessary to accomplish the work;
- providing the methods and means of construction;
- job-site safety;
- coordinating the bids and work of subcontractors and prime or trades contractors;
- establishing and maintaining the construction schedule;
- fulfilling the requirements of the construction documents;
- guaranteeing the quality of construction;
- correcting deficiencies covered by the guarantee.

The architect assists the owner in reviewing the proposals and interviewing the firms, and in selecting one firm as their first choice. If desired, fees and other costs could be negotiated with the selected firm. Once an agreement is reached between owner and

contractor, the appropriate contractual documents would be drawn up, again with the architect's assistance.

Subcontractor Selection:

Towards the end of the design process, discussions will take place regarding the selection of subcontractors for bidding on subcontracted work. Usually, the contractor will present a preliminary list of qualified subcontractors for review by the owner and architect. Either party is free to suggest additional names or to ask that names be removed from the list. Although local contractors or parishioners are always encouraged to participate in the bidding process, the contractor will usually want to pre-qualify unknown subcontractors to make certain that they are capable of providing work whose quality will be consistent with the rest of the project. Once the list has been agreed upon, the pre-selected subcontractors will be invited to bid on the project.

When the bids have been received by the contractor, they will be opened with the owner and architect present, if so desired. Although the contractor and the architect may make recommendations, final selection of subcontractors will be the owner's responsibility. However, should the owner select a subcontractor whose bid is higher than the subcontractor recommended by the contractor, the Guaranteed Maximum Price may have to be adjusted accordingly.

Guaranteed Maximum Price:

The Guaranteed Maximum Price, or GMP as it is commonly known, is the agreed upon maximum total cost for the construction of the project. This is sometimes called an upset price. Costs beyond the predetermined maximum are borne by the contractor. If the actual costs are below the maximum, the contractor shares with or returns to the owner the savings, according to the terms of their contract.

The GMP usually includes a contractor's contingency. The size of the contingency will depend upon at which point in the process the contractor provides the GMP. Although the GMP can be provided as early as at 30% completion of the design, it is usually provided at or near the end of the design process in order to keep the contingency as low as possible, thereby maximizing the owner's dollar-to-benefit ratio. Of course, the contractor provides updated cost estimates at various points during the design process to help keep the project within budget.

Once the GMP has been agreed to, it can only be increased by change orders due to owner-initiated scope changes, selection of higher cost subcontractors by the owner or discovery of unknown site conditions.

Construction Contract Administration:

One of the greatest advantages of the negotiated select team is that, once the project is under construction, the process is virtually identical to the design-bid-build process. The contractor has complete responsibility for the construction of the project, including the performance of the subcontractors. Payments are approved by the architect and paid only to the contractor.