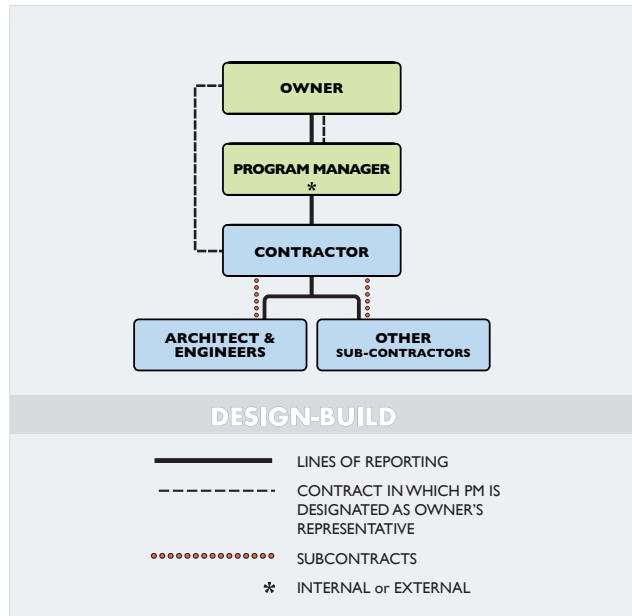


The Design-Build method of construction project delivery can be a very successful way for the owner to manage design and construction for a fairly wide range of building types. It is best used by an owner organization that is in a position to rely upon relationships in the procurement of construction. However, it can also be useful for other types of owners as long as procedures are provided for leverage retention in the Owner-Contractor agreement and an appropriate plan of management is followed. Design-Build has been used for years by many owners with good results. The method was first used fairly widely in the United States for industrial projects in which the cost of the building envelope was less than the manufacturing or process equipment that went into or alongside the building itself. Use of Design-Build has grown steadily through the years on a wide range of building types and sizes, though it is still generally favored by many owners and consultants for simpler building types.

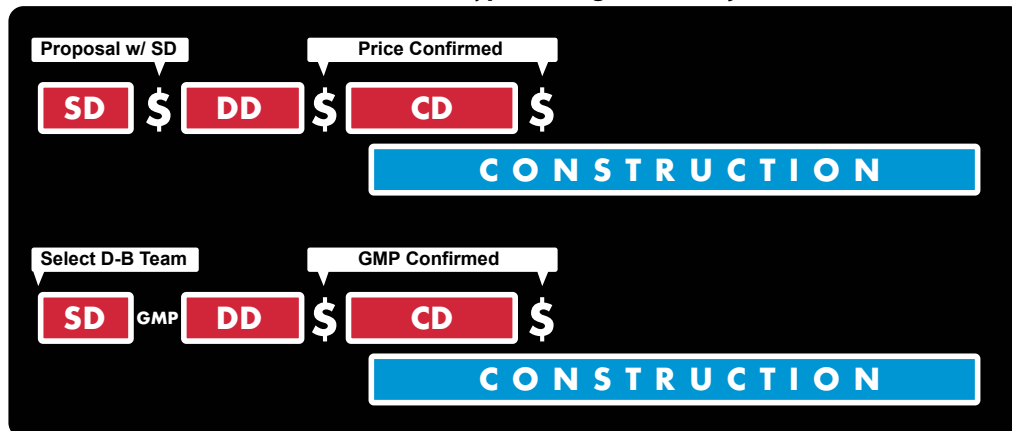
FIGURE 1



In Design-Build the Architect and Consulting Engineers are subcontractors to the (general) Contractor or are members of the Contractor's organization. In some cases the Contractor may be a subcontractor to the Architect or Engineers.

Figure 2 illustrates the two basic forms of Design-Build, though there are many variations on both forms illustrated. (The term Design-Build should not be interpreted to refer to the Bridging method. Bridging, a different project delivery method is a hybrid of the traditional Design-Bid-Build method and Design-Build method.)

FIGURE 2 - The Two Basic Courses of a Typical Design-Build Project



SD: Schematic Design Phase DD: Design Development Phase CD: Construction Documents Preparation

Design-Build

In the form illustrated at the top of Figure 2, the selection of the Contractor (often referred to as the “Design-Build Team” or the “Design-Builder”) occurs after one or more prospective contractors submit a preliminary design along with a price proposal. If an external Program Manager (PM) is engaged by the owner, the PM, acting as the Owner’s representative should be selected first to assist the Owner in preparing the Request for Proposal (“RFP”) as well as assisting the Owner in identifying and vetting prospective proposers.

In the form illustrated at the bottom of the chart, the selection of the Contractor will come before design work starts. Selection is usually based primarily on the qualifications, experience and references for the Design-Build team. If the Owner has retained an external Program Manager, the PM would come on board before the selection process starts to assist the Owner in the preparation of an RFP which would typically include site information and other material and criteria as may be appropriate.

There are a number of advantages to the Owner in using Design-Build. Two particularly valuable ones are that the Design-Build method (a) offers the opportunity to integrate into the design process the most advanced construction technology and practical knowledge of construction costs and (b) provides a clear single responsibility for correction of any design or construction problems that are discovered before or after occupancy.

Major issues of concern with Design-Build method are the conflict of interest between the Owner and the design Architect/Engineers, the difficulty for the Owner in obtaining apples-for-apples competition on the total price of the construction and the loss of control over the design, particularly important functional requirements in construction details and planning. While the conflict of interest and lack of apples-for-apples competition are inherent in Design-Build, there are procedures that can be employed in a Design-Build project that allow the Owner to exert somewhat better control over the functional requirements of construction details and planning.

Typical Program Management Services for Design-Build Projects

1. In the Case of Competing Design-Build Proposals

PRE-DESIGN PHASE

- Assist the Owner in making final decisions about the project requirements and scope, possibly carrying out for the Owner preliminary technical investigations as to the suitability of the site, as well as evaluating with and for the Owner potential legal and permitting constraints. As necessary, the PM may assist the Owner in site acquisition.
- Initiate and operate/deliver thereafter a dynamic database, cost-loaded scheduling and reporting Program Management Information System (PMIS) along with briefing reports for senior executives of the Owner’s organization. These may be web-based per authorization from Owner.
- Prepare or determine that a full Program of Facility Requirements (“Program”) has been prepared and approved by all stakeholders in the Owner organization. Be sure the Program adequately covers planning criteria as to the function of the building and construction details. Put into a format, or determine that the Program has been put into a format that is suitable as an exhibit to the contracts with Architect, Engineers and CM.

- Simultaneously with the above task, during the review and approval of the Program, develop a Total Project Budget (“Budget”) covering all hard and soft costs as well as non-construction related procurements, such as furnishings, moveable equipment, security systems, signage, fees, taxes, financing costs, etc., along with contingency funds.
- Simultaneously with the above task, develop a Master Project Schedule (“Schedule”) for all major activities of all parties from the pre-design phase through occupancy.
- Determine that the Program, Budget and Schedule are compatible with one another. Assist the Owner in resolving any compatibility issues.
- Assist the Owner in identification of candidate Contractors (“Design-Build Teams” or “Design Builders”) obtaining information about qualifications. Carry out due diligence whether selections are to be competitive or single source.
- Assist the Owner in the obtaining the proposal(s) from the prospective Contractor(s).

DESIGN AND CONSTRUCTION PHASE

- Assist the Owner in evaluating proposals and awarding the Design-Build contract. In some cases the Program Manager may want to recommend that there be interim individual critiques for the various competing design-builders while they are preparing the preliminary designs that will be part of their design, price and schedule proposals. After receipt of proposals, if one or more proposals are found to be of interest to the Owner but some aspects of the proposal, including inadequate illustration of the design, plans, and construction details, the Program Manager might consider preparing a request for revised proposals from two or more of the proposers and have a design review work session with each remaining contender before the revised proposals are submitted.
- Throughout the further design phases carry out price and schedule verifications, continuous cost and schedule analyses, and cost control procedures with verification of any subsequent additional price quotations and schedule change requests from the Contractor as the design work progresses. Utilize a suitable system of a multi-track costing with line item by line item reconciliations. To maintain the Owner’s leverage through these phases, certain provisions should be in the original RFP and the Agreement between Owner and Design-Builder in this regard and administered during this period. Assist the Owner in protecting the original price and schedule commitments of the contractor through procedures built into the Design-Build contract earlier by the PM on behalf of the Owner.
- Track schedule adherence throughout the design and construction phases and advise Owner and other parties on any necessary recovery scheduling.

Continued on Next Page

Design-Build

- Throughout the design phases and construction coordinate the approval process with all users and stakeholders in the Owner's organization as well as with any separate financing and/or approval agencies that are not to be processed by the Contractor.
- During the construction phase, administer the Contractor's agreement with the Owner in essentially the same manner that the Owner and PM would administer a traditional general construction contract. Coordinate the inspections of the work carried out by separately engaged Architects/Engineers or inspectors who are independent of the Contractor's designers. Review and approve on behalf of the Owner all progress and final payments to the Contractor as well as any other vendors or providers of services.
- Assist the Owner in closing out the various contracts and provide records for retention.

2. In the Case of Early Selection of the Design-Build Team

The basic difference between the Competing Design-Build Proposals form and the Early Selection of the Design-Build Team form is that in the Early Selection form, the detailed design work does not start until the Design-Build Team has been selected and engaged. Thus, the PM services needed in this process are essentially the same except the PM services related to the design phase start earlier in the Early Selection form and the RFP preparation is somewhat more extensive in the Competing Design-Build Proposals form.

In this form, there is intended to be a particularly close working relationship between the Owner, PM and the Design-Build Team from the start. The documentation of the RFP in the first place will have been somewhat different.