UNDERSTANDING PROJECT DELIVERY METHODS

by Harvey W. Berman

OWNERS AND OTHER PARTICIPANTS IN THE CONSTUCTION PROCESS

To deliver a construction project, you must coordinate the efforts of the owner, architect, and contractor in an accepted and acceptable contract form.

Owners and other participants in the construction process have diverse needs in the real estate project construction process. To accommodate these differing needs, various options for building a structure have evolved. These various options are referred to as project delivery methods. Methods range from the basic (design-award-build) to the more complex (fast-track and turnkey construction). Each method has its own benefits and disadvantages and some methods are better suited for certain kinds of projects. Your role in assisting clients with these options will depend on precisely when in the building process you were first consulted. For example, the client may contact you at the outset before the architect is selected, after the architect is selected, after both the architect and contractor have been selected, etc. To properly advise a client, you must know what the choices are for project delivery so you can assist with the selection of an appropriate method and with the minimization of risks relating to the selected method.

TRADITIONAL METHODS OF CONSTRUCTION

The project delivery methods best known to the public are those commonly used in residential construction. Homes are constructed or remodeled either on a design-build basis or on a design-award-build basis. In a design-build arrangement the contractor, with the assistance of an architect, designs and then executes the designs for the work. In a design-award-build basis, an architect creates the design and a contractor is then engaged to execute the design. Although these two types of construction are seemingly simple, there are many variations of these and other methods some of which can be complex.

Design-Award-Build: Using an Architect and General Contractor

In modern times, the most common method of construction has been design-award-build ("DAB"), also known as design-bid-build ("DBB"). This method usually starts with the owner selecting an architect or other design professional and the execution of an owner/architect contract. Together, the owner and architect develop and work through various design stages until the final design is completed that meets the needs and goals of the owner. The architect then assists the owner to obtain a contractor who will execute the design in accordance with the owner's requirements. A written contract between the owner and contractor is usually executed. The contractor, often termed a general contractor, engages subcontractors to complete the portions of the work not within the capabilities of the contractor, for example, excavation, masonry, steel fabrication, and other specialty work. The subcontractors may in turn have their own sub-subcontractors. Depending on the size of the project, contractors and subcontractors as well as sub-subcontractors will usually execute contracts covering their relationship.

In DAB projects, the architect is the agent of the owner, and to varying degrees set forth in the owner/architect agreement, has a duty to protect the owner's interests with respect to the delegated aspects of the construction project. The architect is the owner's eyes and ears on the project, he is the owner's spokesperson with respect to construction, and he is required to interpret the plans and specifications and provide his opinion on issues relating to construction.

The separation of the architect and contractor in DAB projects creates a system of checks and balances because the architect and the contractor are in a position to discover errors committed by the other and most contracts require them to report these errors to the owner (or its agent) so the effects of an error can be eliminated or minimized. Under many industry contracts, failure to report an error that becomes known or to take proactive steps may result in liability

or to take productive steps may result in liability.

Although the DAB method promotes the construction of a quality project, because of the inherent tension between the design professional and the contractor, this method is often criticized because of the extended time involved in designing and constructing the project as well as the somewhat adversarial nature of the relationship between the architect and the contractor. The two look over each other's shoulder and are all too ready to finger-point if something goes wrong. Because of this situation and others, many variations of this construction method have developed.

There is no contract between the architect and the contractor in the DAB method of construction; therefore, in a dispute, the architect and the contractor cannot sue each other except, generally, in one situation: Most courts will allow the architect and the contractor to sue each other if the other has been negligent; however, even when one of these parties has been negligent, they cannot be forced to join in an arbitration between the owner and one of these parties unless the owner and the other contracting parties have agreed to permit the joinder of the third-party to the proceeding.

- The DAB approach is best when the owner:
- Wishes to be actively involved in the design process;
- Requires a fixed cost before commencement of construction;
- Has sufficient time to permit the design to be fully completed before construction bids are obtained; and
- Wishes to use a project delivery method that is traditional, time worn, well understood, and easy to implement by all participants in the construction process.

Variations of the DAB project delivery method include fast tracking, multiple prime contracting, and use of a construction manager. Although there are a wide variety of contract forms available, the forms most widely used for DAB projects are the American Institute of Architects ("AIA") forms. In most traditional projects for the construction of a building, the contract between the owner and architect will generally be either AIA Form B141 (Standard Form of Agreement Between Owner and Architect) or AIA Form B151 (abbreviated Owner-Architect Agreement). The appropriate agreement for use between the owner and contractor will depend on the manner of compensating the contractor, e.g., fixed fee, guaranteed maximum price, or cost plus. AIA Form A101 is appropriate for a fixed price contract. AIA Form A111 should be used when payment to the contractor is based upon the cost of the work plus a fee, regardless whether a fixed sum or a percentage of the construction cost. The form is applicable to projects with or without a guaranteed maximum price. These forms are intended to be used with AIA Form A201, the General Conditions of the Contract for Construction, which details the general terms of the contract for construction.

For projects of limited scope and complexity, the AIA forms more commonly used are B151 (Abbreviated Owner-Architect Agreement) and either AIA Form A107 (Abbreviated Standard Form of Agreement between Owner and Contractor for construction projects of limited scope where the basis of payment is a fixed fee) and AIA Form A117 (abbreviated Form of Agreement between Owner and Contractor where the basis of payment is the cost of the work plus a fee, with or without a guaranteed maximum price). Each of the 1987 versions of the owner/contractor forms includes an abbreviated version of the A201 general conditions (4-6 pages compared with 24 pages in the 1987 version of A201). AIA Forms A107 and A201 were revised in 1997. For smaller DAB projects, AIA Form A105 is also appropriate.

Construction Manager

To avoid some of the problems inherent in the traditional design-award-build project, it is common for workers to engage a construction manager to perform tasks such as assisting with the development of accurate construction cost estimates that are within the owner's budget, scheduling, technology issues, reviewing the architect's plans for constructability, obtaining and negotiating bids, and coordination of aspects of the work. The construction manager acts as the owner's agent and in theory is supposed to have greater knowledge regarding the cost and availability of labor and materials and estimating the cost and time for completion of construction tasks. Because of the nature of the duties usually assigned to the construction manager, the role of construction manager is most often filled by a contractor, although

construction manager, the role of construction manager is most often filled by a contractor, although architects also act as construction managers.

Because the construction manager is the owner's agent and does not have a contract with the contractor(s) or subcontractors when it is also a contractor, if a problem arises with the coordination of the project, contractors generally do not have the right to sue the construction manager but must sue the owner who then may sue the construction manager. The construction manager owes a duty of loyalty to the owner and can generally be expected to side with the owner as to issues with trade contractors.

Generally, there are two types of construction managers:

- Those who act only as advisors; and
- Those who start out as advisors and then later become constructors.

The most common form of construction management is when the contractor acts as a construction manager through the design, budgeting and bid procurement phase and then acts as a contractor for some or all of the construction of the project. When the construction manager is also the contractor, the contractor often provides a guaranteed maximum price or some other cost limitation regarding the work. In this situation, the construction manager acting also as the contractor usually contracts directly with the subcontractors for the performance of the work and is responsible to the subcontractors for delays caused by sequencing or coordination errors. When a construction manager becomes responsible for the work, the construction manager's relationship with the owner shifts from that of an advisor to that of a vendor, which increases the construction manager's liability to the owner. The construction manager becomes responsible to the owner and the subcontractors for problems with cost and scheduling. The diagrams at Appendix F illustrate the two most common forms of construction management

The AIA forms that apply to construction management are:

- A101/CMa Standard Form of Agreement Between Owner and Contractor Where the Basis of Payment is a Stipulated Sum
- A121/CMc (AGC Document 565) Owner-Construction Manager Agreement Where the Construction Manager Is Also the Constructor
- A131/CMc (AGC Document 566) Agreement Between Owner and Construction Manager Where the Construction Manager is Also the Constructor and Where the Basis for Payment is the Cost of the Work Plus a Fee and There is No Guaranteed Cost
- A201/CMa General Conditions of the Contract for Construction – Construction Manager Edition
- A511/CMa Guide for Supplementary Conditions – Construction Management – Adviser Edition
- B141CMa Standard Form of Agreement Between Owner and Architect – Construction Manager Edition
- B144/Arch-CM Standard Form of Amendment for the Agreement Between the Owner and Architect – Construction Management Services Adviser
- B801/CMA Standard Form of Agreement Between Owner and Construction Manager – Adviser

Design-Build

In the design-build method, the owner contracts with a single entity to provide both the design and construction of the building, systems, or equipment. The term is often used interchangeably with turnkey and EPC (engineer, procure, and construct) which is similar to design-build; however, with turnkey construction, in addition to designing and constructing, the same entity often finances, maintains, operates or leases the space back to the owner. Whether a project is turnkey or design-build can have significant implications regarding the liability of the contractor. The appended diagrams show some of the design-build

variation listed below:

Design-Builder Is Contractor

The owner contracts with the contractor to design and build the structure (the contractor is prime). The contractor may then subcontract out aspects of the work including the design. This is the most common form of design-build.

Design-Builder Not Architect or Contractor

The owner contracts with the design-build entity which then subcontracts design and construction to separate entities. Appendix C.

Design-Builder Is Joint Venture.

The owner contracts with a joint venture consisting of the design professional and contractor (joint venture is prime). The joint venture then subcontracts out some or all of the work as appropriate. Appendix D.

Design-Builder Is Architect.

The owner contracts with a professional design corporation that designs work and then subcontracts out construction. Appendix E.

The design-build form of construction fosters teamwork between the designer and contractor early in the project and facilitates early budgeting, programming, and financing. It also promotes review of the design as it proceeds for constructablilty and cost of construction. Well suited for fast-track construction and modern project management techniques, design-build projects are often more cost-effective and less susceptible to delays in the work than traditional projects.

Perhaps the greatest advantage for the owner is that the owner only has to look to one party for the design and the construction. If a problem arises, design-build avoids the customary finger pointing that results when the architect and the contractor attempt to blame each other for a problem. The owner is secure knowing that in the typical circumstance, it does not have to prove which one of the parties is responsible for the mistake because, in most cases, the entire responsibility for all aspects of the project resides in a single design-build entity. Generally, the owner does not have to be concerned with which of the parties is responsible.

Because the architect and the contractor are usually on the same team in the construction of the project, many owners observe a reduction in disputes and an increase in the use of alternative dispute resolution techniques. Several insurance companies have apparently noted a reduction in claims with design-build projects.

Disadvantages of Design-Build

The two primary disadvantages of the design-build method are:

- The owner does not receive the protection of the system of checks and balances that exist when it contracts separately with an architect and a contractor; and
- The owner does not receive the cost-savings that often result from the bidding process.

The use of design-build as a project delivery method may be limited in some states by statutes relating to licensing of design professionals and public projects. Some states have statutes that impose limitations on the types of entities that may provide design services and may not permit contractors to provide design services. For a good discussion of the differing design-build requirements in each state, see *The Design/Build Process: A Guide to Licensing and Procurement Requirements in the 50 States and Canada* (ABA, Forum on the Construction Industry, 1997). Some states have statutes that contain versions of the

Federal Brooks Act. Brooks Architect-Engineers Act, 41 U.S.C. 541, *et seq.*

To protect the public, these mini-Brooks Act laws, as they are often termed, generally require that architects be separately engaged by governmental units for public projects. These laws stem from the inherent conflict of interest when a design professional and contractor work for the same entity. These laws seek to ensure that a quality project is built in accordance with the public interest.

Forms Available for Design-Build

As with design-award-build, there are a variety of forms available for design-build projects. The best known forms are the AIA forms listed below:

- **A191-1996**
  Standard Form of Agreements between Owner and Design-Builder;

- **A491-1996**
  Standard Form of Agreements between Design-Builder and Contractor; and

- **B901-1996**
  Standard Form of Agreements between Design-Builder and Architect

Each of the A series forms contains two agreements that the AIA recommends be used sequentially. For AIA Form A191 relating to situations in which an owner is contracting with one entity that will be responsible for design and construction services, the first agreement covers preliminary design and budgeting services. The second agreement deals with the final stage of design and construction. Form A491 is intended to be used by a design-builder and a construction contractor where the design-builder has contracted with an owner to provide design and construction services under the agreements contained in AIA Form A191. The first agreement covers management consulting services to be provided during the preliminary design and budgeting phase of the project . The second agreement deals with construction. See Documents Synopses, American Institute of Architects at 4 and 5 (1993).

AIA Form B901 is the Design-Builder Architect Agreement which presupposes that the design-builder has previously contracted with the owner to provide design and construction services under the agreements in AIA Form A191. Like the other forms, B901 contains two agreements to be used in sequence by a design-builder and an architect. The first agreement covers preliminary design and the second covers final design. See Documents Synopses, American institute of Architects at 8 (1993)

Associated General Contractors of America Forms

The Associated General Contractors of America ("AGC") has a set of design-build forms listed below which are even more comprehensive than the AIA forms:

- **AGC 400**
  Preliminary Design-Build Agreement between Owner and Contractor;
- **AGC 410**
  Standard Form of Design-Build Agreement and General Conditions between Owner and Contractor (Where the basis of payment is the Actual Cost Plus a Fee with a Guaranteed Maximum Price);
- **AGC 415**
  Standard Form of Design-Build Agreement and general Conditions between Owner and Contractor (Where the basis of payment is a lump sum);
- **AGC 420**
  Standard Form of Agreement between Contractor and Architect/Engineer for Design-build Projects;
- **AGC 440**
  Change Order/Contractor Fee Adjustment;
- **AGC 450** Standard Form of Agreement between Design-Build Contractor and Subcontractor;
- **AGC 460** Standard Form of Agreement between Design-Build Contractor and Design Contractor and Design-Build Subcontractor (Where the Subcontractor Provides a Guaranteed Maximum Price).

The AIA and AGC design-build documents require that the design-build agreement be executed before

design services are begun; therefore, the construction cost or a guaranteed maximum price will not be fixed until after a preliminary design has been prepared by the design-builder and approved by the owner. Stein, 1 Construction Law at 3-191 (Matthew Bender 1997).

The Engineers Joint Contract Committee ("EJCDC") of the National Society of Professional Engineers also has a comprehensive set of design-build forms which are listed below:

- **1910-40**
  Standard General Conditions of the Contract between Owner and Design-Builder;
- **1910-40-A**
  Standard Form of Agreement between Owner and Design-Builder on the basis of a Stipulated Price;
- **1910-40-B**
  Standard Form of Agreement between Owner and Design-Build on the Basis of Cost Plus;
- **1910-41**
  Standard Form of Subagreement between Design-Builder and Engineer for Design Professional Services;
- **1910-43**
  Standard Form of Agreement between Owner and Owner's Consultant for Design Professional Services on Design-Build Projects;
- **1910-48**
  Standard General Conditions of the Construction Subagreement between Design-Builder and Subcontractor;
- **1910-48-A**
  Standard Form of Construction Subagreement between Design-Builder and Subcontractor on the Basis of a Stipulated Price;
- **1910-48-B**
  Standard Form of Construction Subagreement between Design-Builder and Subcontractor on the Basis of Cost Plus

These documents were all revised in 1995 and are the most current of all of the available forms.

The Design-Build Institute of America, a nonprofit organization located in Washington, D.C., planned to publish its first set of forms at the end of 1998. None of the above organizations has a standard form for smaller design-build projects.

OTHER FORMS OF PROJECT DELIVERY –-NOT SO USUAL

Other forms of project delivery are fast-track design and construction project method, the multiple prime contractor method and the project management method.

Fast-Track Design and Construction Projects

The fast-track method evolved as a response to the need by some owners for faster than usual design and construction of a project. Unlike DAB which involved the completion of each phase of the project before moving to the next phase, *e.g.*, design, award and building, fast-tracking involves commencing the award and construction phases before the project design has been fully developed. This approach to construction is often used when the owner has time constraints on account of contractual or lease obligations, when interest rates are high, when certain materials or equipment require long lead times to obtain, or when the requirements of a particular business require rapid completion of the work.

Because fast-track projects, by their very nature, increase the potential for problems relating to scheduling and coordination of the design and construction and make it more difficult to accurately determine the cost of construction, owners often engage construction managers, project managers, or other advisors to assist with the planning, coordination and implementation of the various design and construction tasks.

Theoretically, if the bidding and construction work is begun earlier, before the design has been fully developed, the project can be completed in less time than would ordinarily be the case in a traditional DAB project delivery method.

Multiple Prime Contracts

Multiple Prime Contractors

A method of construction that is becoming more common especially for larger projects and sophisticated owners involves the use of multiple prime contractors. Instead of contracting with a single contractor who then subcontracts out some or all of the work, the owner contracts directly with various trade contractors for the performance of their segment of the work. The owner may contract directly with a few trade contractors or with many contractors depending upon the owner's ability to effectively manage the contractors.

The main difficulty with this delivery system is that instead of having a general contractor who is responsible for bringing in the project on time within the cost parameters established by the owner, the owner is responsible for scheduling, coordination, and control of the cost of the construction. In addition, each of the prime contractors contracts directly with the owner and therefore may sue the owner in the event the owner breaches one of its duties under the contract. Appendix G illustrates the typical multi-prime contractor project relationships.

Because of the scheduling, coordination, and cost control problems inherent in the multiple-prime method, many owners will engage a construction manager or other advisors to assist with the process. Other owners may have their own in-house project management team that will assume responsibility for coordination, scheduling, and cost control.

Project Management

The project management approach is generally limited to owners who have in-house capability to design, manage, and construct a project. In some cases, the owner may subcontract with an entity that can perform all of these services. This resembles the design-build project delivery system with the owner as the design builder. The primary difference between this method and other methods is that the owner has or obtains most of the design and construction capabilities in-house.

This approach is most often found with companies that are engaged in a business involving frequent or repetitious construction projects, *e.g.*, a company involved in the construction of hotels, condominiums, apartments, or fast-food restaurants.

Program Management

Program management involves the provision of various forms of consulting services for the owner in-house or outside the owner. Management services range from the selection of the best project delivery method, selection of the appropriate design team, provision of design services, development of contract documents, assistance with the selection of contractors, and administration of the construction project. A program manager may even be a constructor. At certain levels, the program manager resembles a construction manager or project manager. Program management is particularly useful when the owner does not have the resources or ability to manage the design or construction process or where the project is complex.

CONTRACT FORMS FOR SMALLER PROJECTS

Most people do not realize that there are standard forms available for smaller projects involving architects that do not involve hundreds of pages and paragraphs. The AIA, which publishes over 70 forms, has a set of short forms that are designed for the small project which is expected to have a short duration. These forms are A105 and A205 which are combined in one set. Revised in 1993, Form A105 (five pages with mostly blank space for insertions) is the agreement between owner and contractor and Form A205 (Four pages) is the general conditions of the contract for construction which is specially tailored for small projects.

The AIA forms do not provide an owner/contractor agreement for projects in which an architect is not involved in the construction project via a separate contract with the owner; however, Forms A105 and A201 can be readily modified in these circumstances if no architect is involved.

As indicated previously, the AIA also publishes forms for projects that have a limited scope, *e.g.,* B151 (Abbreviated Standard Form of Agreement Between Owner and Architect) and A107 (Abbreviated Standard Form of Agreement between Owner and Contractor for Construction Projects of Limited Scope where the

Basis of Payment is a Limited Sum). Form B151 (18 pages long) is intended to be used with A201-1997, the newly revised General Conditions of the Contract for Construction and is for projects based upon five phases, which is the same milestone method contained in the 1987 form. Form A107 (21 pages log) includes its own abbreviated general conditions and does not incorporate A201-1997.

PRACTICE CHECKLIST FOR UNDERSTANDING PROJECT DELIVERY METHODS

Owners and other participants in the construction process have diverse needs in the real estate project construction process. To accommodate these differing needs, various options for building a structure have evolved.

- The most common method of construction has been design-award-build ("DAB"), also known as design-bid-build ("DBB"). The owner selects an architect and executes an owner/architect contract. Together, the owner and architect develop and work through various design stages until the final design is completed that meets the needs and goals of the owner. The architect then helps the owner obtain a contractor who will execute the design to the owner's requirements.

  - Select the DAB approach when the owner wishes to be actively involved in the design process, requires a fixed cost before commencement of construction, has sufficient time to permit the design to be fully completed before construction bids are obtained, and when the owner wishes to use a project delivery method that is traditional, time-worn, well-understood, and easy to implement by all participants in the construction process.

- In design-build, the owner contracts with a single entity to provide both the design and construction of the building, systems, or equipment. The design-build form of construction fosters teamwork between the designer and contractor early in the project and facilitates early budgeting, programming, and financing. Design-build projects are often more cost-effective and less susceptible to delays in the work than traditional projects.

  - Consider this if your client wants one entity to be responsible for design and construction (single-point responsibility where cost and time must be minimized such as for fast track construction and modern project management techniques).

  - Check local law. Some states limit the use of design-build as a project delivery method through statutes relating to the licensing of design professionals and public projects. Some states have statutes that impose limitations on the types of entities that may provide design services and may not permit contractors to provide design services.

- Other forms of project delivery are the fast-track design and construction project method, the multiple prime contractor method, and the project management method.

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A NOTE ON THE APPENDICES: The appendices to the original article contain flowcharts which illustrate several of the processes described in the article. If you would like to receive a copy of the appendices, please e-mail us at *info@bodmanlonlgey.com* with your request.

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