

In examining and evaluating the information submitted, the owner may, in addition to checking the references supplied by the constructor, make independent checks on the constructor's credit standing, visit projects completed and interview owners and operators, investigate safety and litigation records, and review other indicators of performance capability.

14.2 CONSTRUCTOR QUALIFICATIONS

After the submittal and confirmation of constructors' qualifications, the owner is ready to proceed with selection of a constructor. Private-sector owners may choose the constructor or design-builder that they consider the best qualified. Alternatively, the owner may use the qualification information to develop a short list of pre-qualified constructors who are asked to

- Bid competitively for the work on a unit-price or lump sum basis; and
- Present priced proposals for negotiation of a contract on mutually acceptable terms.

If the owner is a public agency, the analysis of the qualification information may be used to select a short list for submittal of priced proposals.

If pre-qualification information is not being requested from constructors, criteria may be set by the agency for qualifying bidders in terms of experience, size, licensing, workload, specialized expertise, financial status, and other qualifications appropriate for the construction of the project.

14.3 SELECTION BY COMPETITIVE BIDDING

Ingredients for true price competitive bidding include the following:

- A clear, concise set of project drawings, project specifications, and other proposed contract documents;
- A defined procedure for the bidding and award;
- An adequate industry capacity and interest.

Adequate industry interest and capacity ensure that a sufficient number of bidders are competing against each other to win the project.

The contract documents specify the product to be delivered by the constructor. The bidding procedure protects the owner as well as the bidders by providing a systematic approach to bidding and awarding the contract.

14.3.1 Role of Design Professional

The design professional's degree of involvement in the bidding process depends on the agreement for professional services with the owner. The nature and extent of this agreement are influenced by the owner's staff size and capability. In a typical arrangement, the design professional:

- Prepares project drawings, project specifications, bidding documents, and other contract documents, as well as estimates of probable con-

Competitive Bid Web Resources

-  AIA: <http://www.aia.org>
-  EJCDC: <http://www.ejcdc.org>
-  ACEC: <http://www.acec.org>
-  AGC: <http://www.agc.org>
-  APWA: <http://www.apwa.net>

struction cost and duration for the review and approval of the owner, the owner's legal counsel, and other advisers;

- Assists the owner in obtaining bids for each separate contract to be awarded;
- Assists the owner in evaluating bids and in awarding contracts.

The general responsibilities of preparing documents for the bidding process and performing activities are outlined in standard procedures by a variety of professional organizations.

14.3.2 Competitive Bidding for Public-Sector Projects

Competitive bidding is a frequently used constructor selection method for federal, state, and local government projects. For these types of projects, the use of competitive bidding is usually mandated by law or agency regulations. This mandate reflects a legislative body's opinion that competitive bidding for construction contracts provides value to the taxpayers and fairness to the construction industry when spending major sums for capital programs. The goals of value and fairness are met when the integrity of the bidding process is preserved.

Beyond the general mandate for competitive bidding, there are numerous specific rules and criteria that may affect public owners during the constructor selection process. The information required for typical bidding and award of a public construction contract is defined by the set of documents issued to prospective bidders. These documents generally include

- The invitation to bid (legal notice), instructions to bidders, information for bidders, and bid forms. Bidder qualification data may be a part of the bid submittal if proof of valid licensing and bonding capacity is all that is required. If constructor pre-qualification is used as a means of developing a list of qualified bidders, this activity occurs before the start of the conventional bidding procedure.
- Contract documents specify the constructor's performance on the project and generally include the owner/constructor agreement, performance and payment bonds, the bid or proposal, general conditions, supplementary conditions, project specifications, project drawings, and addenda issued during the bidding period.

14.3.3 Owner's Bidding Procedures for Public Works

The procedures required to solicit and inform bidders, to receive and analyze bids, and to award contracts under a competitive bidding system include the following actions prior to the bid opening, during the bid opening process, and after bid opening. These activities are conducted by the owner, assisted by the design professional, legal counsel, and other advisers.

14.3.3(a) Prior to Bid Opening

- Receive and evaluate constructor qualifications if a pre-qualification of bidders is part of the process.



Management of Public Works Construction Projects, Section 16, "Bidding," James L. Martin, American Public Works Association, 1999.

- Invite qualified constructors to bid on the project through legal notices and other advertisements, direct mailings, and notices to trade publications and accredited plan rooms.
- Set bid-opening time and date to allow sufficient time for constructors to make accurate quantity take-offs, conduct project site investigations, obtain subcontractor prices, determine material and equipment costs, and take whatever action is necessary to prepare a unit price or lump sum bid.
- Arrange for distribution of bidding and contract documents to interested bidders, accredited plan rooms, and other viewing locations.
- Maintain a current list of document holders.
- Make appropriate arrangements so that prospective bidders may have access to the project site.
- When appropriate and practical, hold a pre-bid conference at the project site to answer inquiries on and clarify provisions of the bidding documents. The pre-bid conference is not used to convey information in addition to that contained in the bidding documents. The constructor and owner are held responsible for what is in the written documents, not the conversation at the pre-bid conference. If clarification is required, an addendum is issued to all document holders.
- Issue addenda to all document holders of record. If an addendum is required, and cannot with certainty reach all prospective bidders in time to permit adjustments in the bid to be submitted, the bid opening may be postponed.

14.3.3(b) Bid Opening

- Require that all bids be dated and time-stamped when received at the bid opening location. Late bids should be returned unopened.
- Open bids at a public meeting where they are read aloud.
- Check bid submittals for presence and amount of bid security, acknowledgment of receipt of all addenda, presence of required documentation.
- Make original bidding documents available for inspection in the presence of the bid-opening official.
- Safeguard bids for later evaluation.

14.3.3(c) After Bid Opening

- Prepare bid tabulations and make information available to interested parties.
- Verify and analyze qualification data submitted with the bids.
- Confirm compliance with other requirements of bidding documents.
- Take appropriate action with advice of legal counsel in rejecting non-conforming bids.
- Take appropriate action with advice of legal counsel in permitting withdrawal of bids by bidders claiming errors in bid preparation.
- Analyze bid prices (compare to estimate of probable cost), supporting information, and documentation, using criteria set forth in bidding instructions, and determine lowest responsive, responsible bidder.

- Reject all bids if constraints of budget, schedule, or other critical elements cannot be met.
- Take appropriate action to advise all bidders of the apparent low bid and release unsuccessful bidders in accordance with the instructions to bidders.

14.3.3(d) Contract Award

- When required, obtain approval of federal or state agencies administering grants and/or loans.
- Make award within the time specified in the bid documents (AGC recommends a maximum of 75 days after bid opening). If the time must be extended, a written approval from the selected bidder is required.
- Prepare a notice of award, forwarding multiple copies of the contract documents for the successful bidder's signature. The notice of award allows a certain period of time for the constructor to sign the documents and return them along with executed bonds, certificates of insurance, and other required documentation.
- Have owner sign and execute contracts, and issue notice to proceed with the work.
- Carefully observe procedures, rules, and regulations that protect the integrity of the bidding process, provide fair and equal treatment of bidders, and give the public agency owner fair prices from the competitive process.

14.3.4 Competitive Bidding for Private-Sector Work

The private-sector owner may elect to follow essentially the same procedures in securing competitive bids as have been outlined for the public sector. The owner may invite a broad spectrum of the construction industry to participate or may limit participation to a select bidders list chosen by pre-qualification.

In either case, the owner and bidders rely on defined bidding and contract documents, generally prepared by the design professional, to provide mutual understanding of the project and to set rules and procedures for competitive bidding and award of contract.

14.4 SELECTION PROCEDURES FOR COMPETITIVE NEGOTIATED CONTRACTS

Best Value Contracting:

Best value contracting is a process used in competitive negotiated contracting to select the most advantageous offer by evaluating and comparing factors in addition to cost or price.

Situations occur where requirements solicited using competitive sealed bidding and contract award based solely on lowest price may not be appropriate. In these situations, the owner first compares the qualifications submitted by interested constructors. The owner selects the constructor best qualified for the project, according to established criteria, and then negotiates a contract for project construction with that firm or person. This approach generally results in some form of reimbursable cost-plus-fee contract, although negotiated lump sum or unit-price arrangements are not precluded.

If competition more directly related to construction or design-build services is desired, the owner selects a list of constructors on the basis of qualifica-

tion analysis. The owner then solicits proposals from constructors on the list to address certain topics defined by the owner. These topics typically include

- Project understanding with emphasis on the owner's goals and objectives;
- Approach to unique project ideas in the construction plan;
- Organization of project activities—services proposed;
- Proposed schedule, with milestones;
- Programs for safety, quality control, design, and use of temporary structures;
- Availability of construction crafts, use of subcontractors, minority involvement;
- Use of local resources;
- Business information—wage and salary costs, overhead costs, contracting policy, insurance, and other related items;
- Project budgets by components of the work;
- Proposed cost of work—unit-price, lump sum, reimbursable cost-plus-fee;
- Key management and supervisory personnel to be assigned to the project.

With this information available, the owner makes an evaluation of the organizational and cost elements of the project and negotiates a contract with the constructor judged to offer the overall best value to the owner.

14.5 SELECTION PROCEDURES FOR NONCOMPETITIVE NEGOTIATED CONTRACTS

Under certain circumstances the owner may select a specific constructor and negotiate the contract. Situations where this procedure applies include

- The owner may choose the constructor based on the constructor's satisfactory performance on projects previously done for the owner;
- The constructor may have unique qualifications for the planned project;
- The constructor is already working at the project site;
- The urgency of the situation requires immediate action. (For example, damage control, restoration of failed utilities, protection against flood or other natural disaster.)

In the case of sole source award of a contract by a public agency, the constructor may have unique characteristics, such as a record of successful business relations with the owner, specialized expertise not available elsewhere, or may be available immediately to handle an emergency.

SUMMARY

Project quality depends in large measure on the ability of the constructor to conscientiously follow the project drawings, plans, and project specifications to complete the construction of project facilities safely, on time, and within budget. With these responsibilities in mind, the owner formulates a selection procedure that emphasizes the evaluation of constructor qualifications. The

owner evaluates these qualifications and makes a list of pre-qualified bidders or proposers who are most likely to be capable of completing the project successfully. The design professional generally assists in the constructor selection process.

Public-sector agencies typically use fair and impartial, though sometimes extensive, bidding procedures that focus on the requirement to obtain a competitively bid low price for construction from a responsible bidder. Private-sector owners may use less rigid selection procedures, often soliciting bids from a pre-selected list of constructors. The competitive bidding process usually results in the award of the contract to the most qualified bidder with the lowest unit-price or lump sum bid. Constructors may also be selected on the basis of competitively priced proposals or by a sole-source selection process.

Up-to-date versions of constructor selection recommendations and guidelines are available from many construction industry organizations. □

Chapter 14: Procedures for Selecting the Constructor

Typical Responsibilities

Responsibility ↓	Owner	Design Professional	Constructor*	Design- Builder*
Adopt bidding procedures	●	⊙		
Request constructor's qualifications	●	⊙		
Prequalify bidders	●	⊙		
Prepare contract documents including project drawings and project specifications	○	●		
Request submittal of bids/proposals	○	●		
Prepare and submit bids			●	●
Receive and evaluate bids	●	○		
Evaluate bidders/proposers if pre-qualifications not used	●	○		
Select qualified constructor	●	⊙		
Select alternatives	●	⊙		
Execute construction contract	●	⊙	●	●

*For design-bid-build situation. In a design-build situation, the Design Professional and Constructor are part of the Design-Builder team.

● = Primary Responsibility ⊙ = Assist or Advise ○ = Review

THE CONSTRUCTION CONTRACT

The construction contract, including all exhibits and attachments, defines the business agreement between the owner and the constructor. Under traditional design-bid-build (DBB) project delivery, the construction contract is a two-party agreement that does not include the design professional. However, the design professional may provide professional services related to construction at the owner's direction during construction.

In a design-build project, the design-build firm contracts to perform both construction and design services. However, the basic elements of the traditional DBB construction contract, as described in this chapter, remain at the core of design-build agreements. Other project delivery systems (described in Chapter 3) involve design-build variations. Therefore, it is important that the construction contract, whatever form it may take, accurately document a meeting of the minds; states clearly the roles and responsibilities of the parties without overlaps or voids; and aims squarely at achieving a quality project.

In this chapter

- 15.1 Functions of the Construction Contract Relating to Quality
- 15.2 Role of the Design Professional in the Construction Contract
- 15.3 Defining and Preparing the Construction Contract Documents
- 15.4 Standard-Form Construction Contract Documents
- 15.5 International Construction Contracts
- 15.6 Design-Build

15.1 FUNCTIONS OF THE CONSTRUCTION CONTRACT RELATING TO QUALITY

The construction contract serves several important functions from the beginning to the end of a project. It defines the rights and responsibilities of the owner and the constructor, ranging from the specific quality requirements contained in the project specifications and project drawings to the owner's obligations to make decisions and payments in a timely manner. Additionally, the contract documents set forth procedures and requirements for management and administration of the contract, such as schedules, shop drawings, and inspections. In this context, the contract documents can be considered a procedures manual to help ensure quality.

Another important role of the construction contract is that of a planning tool for quality of construction. That is, the parties preparing the contract documents can look to the various components to help ensure that appropriate attention is given to quality of construction. This could range from requirements for materials or workmanship to procedural requirements such as submittals and inspections.

The construction contract documents also support a structured planning process in their role as a risk management plan and risk allocation device. Finally, of course, there is the legal function. Contract rights and responsibilities are legally enforceable. This provides certainty to both parties that the other party will perform in accordance with the terms of the contract, which

if prepared with appropriate quality requirements will result in a quality project. In the event of disputes, the contract documents will be an agenda or road map for litigation or other dispute resolution procedure.

15.2 ROLE OF THE DESIGN PROFESSIONAL IN THE CONSTRUCTION CONTRACT

Under traditional DBB project delivery, the construction contract is a two-party agreement between the owner and the constructor. However, it may include a description of the various services and functions the design professional may provide during construction. The design professional may also have a major role in preparing many of the contract documents and compiling documents for use by bidders and the parties.

Other project delivery systems (see Chapter 3) may involve variations. For example, in projects where the owner has retained an agency construction manager (ACM), the ACM may prepare parts of the contract documents. In any case, it is important to carefully coordinate all parts of the contract documents to avoid conflicts or inconsistencies.

15.3 DEFINING AND PREPARING THE CONSTRUCTION CONTRACT DOCUMENTS

Typically there are several separate components to the construction contract documents. Each should be clearly listed in the agreement signed by the parties. These documents supersede any prior oral or written agreements (particularly if there is a contract clause stating this).

Construction contract documents generally include the following:

- The agreement (the document signed by the parties, which customarily identifies the parties; states the contract price, payment terms, and contract time; and lists the contract documents);
- General conditions;
- Supplementary conditions;
- Lien waivers;
- Confidentiality agreements;
- Project drawings;
- Project specifications;
- Addenda (if any) issued before bid submittal;
- Bid instructions;
- Bid forms;
- Contractor's bid;
- Notice to proceed;
- Performance and payment bonds (if any);
- Change orders or contract modifications (post-execution).

Preparation and assembly of the construction contract documents for review and approval by the owner and the owner's legal counsel may be done by the owner's staff, a third-party design professional, a construction management

➤ Chapter 17, "Construction Contract Documentation and Submittals"

professional, or a combination of these parties. Sometimes the contractor or the design-builder may submit a contract to the owner. In any case, preferably a team of individuals knowledgeable about the project and contract documents work together to produce a construction contract that accurately reflects the intent of the parties. Regardless of who prepares the construction contract documents, the owner must make decisions on many subjects, such as insurance requirements, bonds, and bidding requirements.

Because the contract documents are the key to defining quality requirements, it is important to denote the preparation effort necessary to produce quality contract documents both individually and as an integrated “package.” Quality contract documents help provide quality in constructed projects. It is essential that attention be given to a careful review of all of the documents to help ensure coordination and consistency, i.e., avoid gaps and conflicts, the source of many misunderstandings and disputes.

One of the functions of the contract documents is to allocate risks inherent in any construction project. Every risk has an associated, unavoidable cost that must be accounted for or assumed in the design and construction process. Risk should be allocated to the party best able to evaluate, control, bear the cost, and benefit from the assumption of risk. Some risks (weather, for example) may be shared, with each party accepting its own risk for the cost associated by that risk.

Improper allocation of risk is more likely to result in a poor quality project and lead to disputes. Owners benefit from fair and balanced allocation of risk because projects are more likely to be completed on time, with acceptable quality, and at a fair price without the inclusion of contingencies in the contractors’ bids to account for some uncontrollable risk. Fair and balanced allocation of risks also enhance working relationships between the parties throughout construction. Unfair provisions in the contract documents may not be enforceable and are more likely to distract the parties’ attention away from the goals of the project and lead to expensive disputes and litigation. “The Guide to Uniform Location of Subject Matter and Information in Construction Documents,” a joint publication of the American Institute of Architects (AIA Doc. 521) and the Engineers Joint Contract Documents Committee (EJCDC Doc. 1910-16), addresses the question of where to place or find a specific subject in contract documents, offering a uniform approach to the organization of contract documents. It also serves as a comprehensive checklist of items to be included in the construction contract.

15.4 STANDARD-FORM CONSTRUCTION CONTRACT DOCUMENTS

Several components of the construction contract documents may be available as standard forms, to be completed or edited to define the agreement for a particular project. These standard forms typically include the agreement form, general conditions, and surety bond forms. The benefits of standard forms include efficiency in both time and cost in their preparation and include efficiency in the bidding process because bidders are familiar with the terms and working arrangements set forth in the documents. Standard forms are



Organizations mentioned in this chapter

American Council of Engineering Companies: <http://www.acec.org>
Associated General Contractors of America: <http://www.agc.org>
American Institute of Architects: <http://www.aia.org>
American Society of Civil Engineers: <http://www.asce.org>
Construction Management Association of America: <http://www.cmaanet.org>
Construction Specifications Institute: <http://www.csinet.org>
Engineers Joint Contract Documents Committee: <http://www.ejcdc.org>
Design-Build Institute of America: <http://www.dbia.org>
National Society of Professional Engineers: <http://www.nspe.org>

➤ Chapter 23, “Risk, Liability, and Handling Conflict”

Users of standard forms should be cautioned, however, that standard forms can rarely be used without some modification or enhancement. Standard forms need to be carefully reviewed for each specific project and each place and time of construction.

➤ Chapter 7, "Agreement for Professional Services"

more likely to include industry standard allocation of risks and include tested language in the event of disputes. Standard forms are also carefully prepared to coordinate provisions among the various contract documents, thereby avoiding inconsistencies. Large public and private owners, design professionals, and constructors may have their own individually drafted standard contract forms. However, such forms may not always document an appropriate allocation of risk. They may also include potentially unenforceable contract provisions, archaic terms and procedures, and internal conflicts.

Professional organizations and industry associations offer important advantages by promoting the broad use of standardized contract content, forms, definitions, and language. EJCDC (a joint committee of ASCE, ACEC, AGC, and NSPE), AIA, AGC, and DBIA have also developed high-quality standard forms, agreements, general conditions, and other documents, as well as commentaries on the use of these materials. Developed by practitioners with varying perspectives and experiences, and with extensive review by legal counsel, the EJCDC, AIA, and AGC standard forms are coordinated, reliable, "court tested" documents that offer significant advantages in most contracting situations. Descriptive information and purchase procedures may be obtained from the respective organizations (EJCDC documents are sold by ASCE, ACEC, NSPE, AGC, and CSI).

15.5 INTERNATIONAL CONSTRUCTION CONTRACTS

Construction contract documents for work outside the United States are also often based on industry-prepared standard forms. A number of organizations prepare recommended standard general conditions and associated forms. The organizations include the following:

✎ ENAA: <http://www.enaaj.or.jp/>
✎ FIDIC: <http://www.fidic.org>
✎ <http://www.ice.org.uk/>
✎ JCT: <http://www.jctltd.co.uk/>

- ENAA (Engineering Advancement Association of Japan);
- FIDIC (International Federation of Consulting Engineers);
- ICE (Institution of Civil Engineers, United Kingdom);
- JCT (Joint Contracts Tribunal).

For example, FIDIC has prepared a widely used standard form entitled "Conditions of Contract for Works of Civil Engineering Construction" in consultation with lending institutions and with constructor associations. This document (often referred to as the *Red Book*, after its color), currently in its fourth edition, is considered to have fairly balanced the contractual risks and responsibilities between owner and constructor. It is frequently the design professional's responsibility to adapt Part II of the *Red Book*, the "Conditions of Particular Application," to meet the needs of individual countries or projects. Guides to the use of FIDIC conditions of contract are also published by FIDIC. Some are available through ACEC; all may be obtained from FIDIC.

In 1995, FIDIC published "Conditions of Contract for Design-Build and Turnkey" Parts I and II. This document, informally known as the *Orange Book*, is structured much like the *Red Book* but is for design-build or turnkey applications. In 1999, FIDIC published the first edition of "Conditions of Contract for Plant and Design-Build," which is intended for electrical and mechanical