



# The Owner's Construction Guide

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Updated & redesigned,  
from former ACE Committee information



# Owner's Guide to a Successful Project

To the inexperienced owner, just the thought of designing and constructing a new facility brings pangs of anxiety. Worse yet, anticipating the renovation of an existing facility while continuing ongoing operations likely brings thoughts of pursuing a different line of work.

The ACE (Architects, Contractors & Engineers) Committee of NH has carefully considered the issues of both the construction process, and owners' perceptions, expectations and goals. This outline provides a straightforward discussion of the questions most often heard from owners as they begin the process of procuring professional design and construction services.



The question of the best or most appropriate delivery system (conventional bid, construction management, design-build) has been included just prior to this outline. It is a complex issue involving project specific questions best addressed through discussions with your design or construction professional. The questions posed, however, should afford both the first time and experienced owner a better understanding of the design and construction process.

## ***What are the most important criteria for selecting an architect, contractor or engineer?***

The selection of your design and construction professional is clearly the most critical decision you will make in developing your project. There are several important questions to be asked when reviewing a firm's or individual's qualifications.

## ***Does the firm or its key personnel have experience with similar projects?***

Similar projects include not only those of similar use, but also projects of similar size, cost or complexity. Has the firm or its key personnel successfully completed projects under similar development conditions?

Development conditions may include:

- Geographic location
- Renovations (both occupied and unoccupied)
- Schedule (fast-track, phased, etc.)
- Special environmental conditions (winter construction, hazardous materials, wetlands, special permitting, etc.)



## ***How will you staff my project?***

## ***Will the same personnel be assigned throughout the duration of the project?***

## ***What are the educational and experiential qualifications of key personnel?***

## ***What is the concurrent workload of both the firm and key personnel?***

Perhaps most importantly, insist on meeting with the key individuals to be assigned to your project.

## ***Which references are most important to check?***

References are very important in that they create a historical image of the firm. Time should be the only limiting factor in checking references. Some specific areas to research are:

- Financial - banks, lenders, credit rating
- Trade - suppliers, service accounts
- Clients - especially recent and similar project types
- Industry Peers - competitors
- Authorities and Agencies - especially those that might be involved in your project Safety Records

## ***Are there any issues apart from professional qualifications that I should consider?***

Often there are particulars of your project that will impact a choice between two otherwise equally qualified firms. Some issues to consider are:

- Does it matter if my contractor is union organized?
- Is direct experience with local authorities a "must" qualification?

- Is participation by local firms necessary to insure voter or other approvals?

***Once I have a complete set of documents, do I have a guaranteed construction price?***

Unfortunately, the answer is no. The design and construction of a facility is a very complex process involving scores of firms, hundreds of personnel, and thousands of components. No amount of prior planning, regardless of cost, can anticipate every possible scenario. The following are just a few of the many events that may occur during the development process which effect the size, quality and cost of your project:

**Complete Documents:**

All quality design professionals seek to prepare accurate and complete documents. Each project, however, is a unique and custom creation, never before constructed under exactly the same conditions. It is impossible to even approximate “complete” documents without expending many times the amount of fees traditionally budgeted for construction projects. Minor revisions and additions to design documents should be expected in all projects.

**Unforeseen Conditions:**

The exact nature of subsurface site conditions, and concealed conditions in existing construction are difficult and expensive to discover prior to construction.

**Changes in Codes and Regulations:**

During the development process a regulatory change may mandate a change to the project specifications. Code authorities may also reconsider or alter prior decisions, again requiring a field change.

**Act of God/Nature:**

Severe and unusual conditions can affect your project through damage or delay. Keep in mind that some conditions may not be insurable.

**Material Shortages:**

Strikes, weather, regulatory issues, and other unforeseen events may result in delays or require the substitution of more expensive materials.

**Changes in Scope:**

Changes in your own organization may require the project to be revised during construction.



***If changes during construction are possible or even likely, how do I plan for these unknowns?***

First, working with qualified, experienced professionals diminishes the likelihood of unreasonable extras. Second, prepare for the possibility of unforeseen conditions by funding site and existing facility explorations. Your professionals can assist you in determining the reasonable extent of such studies. Lastly, always allow for a contingency item in your total project budget. Again, your design or construction professional can recommend an appropriate contingency for your specific project.

***What types of protection do I have that will assure that my project is of high quality and completed on time and budget?***

Clearly, the best protection an owner can provide is to work with the highest quality design and construction professionals available. Having done this, there are other specific protections to consider.

- Design professionals professional liability insurance
- Contractor/subcontractor performance and payment bonds
- Lien waivers required with each contract progress payment
- Joint checks for subcontract and/or material payments

***What does the Owner contribute to the development and design process?***

Many critical aspects of a successful project are controlled and managed by the owner. A few of the most important are:

- Establish clear goals and objectives at the beginning of the project
- Commit the necessary financial resources, and communicate budget constraints to all team members
- Appoint an owner’s representative who is capable, responsive and in a position of authority

- Provide accurate information on sites, soils, existing buildings, etc
- Foster a spirit of cooperation and communication between all team members
- Maintain an open mind to creative solutions, thereby eliciting the best from all team members

AGC hopes this information was useful. It is our sincere belief that by gaining a full understanding of the design and construction process, and working closely with qualified professionals, each of your projects can be an enjoyable and outstanding success.



# Construction Methods

## Construction Management Contract

**Definition** - an agreement between the owner, general contracting organization, and architect/engineer from the beginning of the design through the completion of the project; where the general contracting organization will serve as the construction professional and expert on the Building Team. Services and work will be performed for a percentage, or a fixed fee. The contract can be converted to a Guaranteed Maximum Price Contract when the plans are sufficiently complete to define the scope of the work.



**Selection Method** - The owner should carefully and objectively review interested general contractors qualifications, giving strong consideration to their experience in working with architects and engineers on similar work during design development. The award should go to the one best qualified, with an acceptable fee.

### **Owner's Requirements**

- The ability to make prompt decisions after weighing the Building Team's recommendations, while including staff
- Selection of an architect/engineer who is willing to operate as a team member, and be receptive to the construction manager's recommendations
- The owner must be flexible, as changes arise, and this method sometimes means not having complete bid documents
- Projects using this method may not be easily marketable because of a lack of definition, scope, or size

### **Advantages**

- Creates a "team" with the owner, general contractor/construction manager, and architect/engineer, before plans are developed.
- General contractor/construction manager is available to give his advice on construction feasibility, cost, site selection, and scheduling.
- Cost effective and time saving by starting construction before all plans are complete.
- Ability to competitively bid, including public work in a public letting situation, all the trade contracts on the job, while at the same time having a qualified general contractor on the team from the inception of design through final completion and acceptance of the project.

### **Cautions**

- Final cost not guaranteed (unless converted when plans are sufficiently completed to a Guaranteed Maximum Price Contract).
- Burden on owner to select a general contractor experienced in scheduling, cost control, plan and specification review, etc., and who has management experience to act as a team member, and qualified to direct the work of the individual trade contractors.
- Under many public bidding statutes, a construction manager is prevented from performing work with his own forces.

## Design-Build Contract

**Definition**- an agreement with a single administrative entity, the prime contractor, to provide the design and construction under one contract. The construction portion of the work may be done under a Lump Sum, a Cost Plus, or Guaranteed Maximum Price contract.

**Selection Method** - Contract may be negotiated or competitively bid. IF competitively bid, it becomes extremely difficult for the owner to compare proposals, and be assured that he is selecting that proposal that will result in the lowest ultimate cost. The owner must produce program requirements, preliminary plans, and specifications with as much definition as possible. He must then make a careful cost-benefit analysis of the proposals submitted.



An added feature in reviewing the qualifications under a Design - Build contract, of course, is the review of the capabilities and experience of the contractor to control the design function. In certain states the general contractor may perform this function within his own organization; in others he must work with a separate architect/engineer consulting firm, unless he has a corporate professional license to practice architecture and/or engineering.

### **Owner's Requirements**

- Staff proficiency in monitoring costs and auditing
- Where there is to be competition on a price basis, the owner must have extremely strong staff capabilities to evaluate the proposals and make a proper cost-benefit analysis.
- Demonstrated ability to program requirements

### **Advantages**

- Owner's program and engineering staff can work directly and closely on a continuing basis with one contract entity, experienced in both the design and construction process.
- Construction may be started before plans are complete and the work phased, which can result in saving time for the entire project.

### **Cautions**

- With other forms of contracting, where there are three contracting identities: the owner, contractor, and architect/engineer, there is a certain check and balance system, which does not exist under the Design-Build method. For example, form, convenience, cost of maintenance, and aesthetics may be unduly sacrificed to low initial first cost. Even with the "building team" concept under the construction management type of contract there still exists the three identities, while cooperating, they are in a sense independent.
- The owner's burden to select a qualified contractor/designer becomes even greater than in the other forms of contract. This is because when the price is guaranteed, and particularly where the contract has been bid on a competitive basis, the owner must accept a certain lack of flexibility in obtaining desired features of the work, and may have to accept certain details of the final design, which he considers undesirable.

## **Lump Sum Contract**

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**Definition-** an agreement to perform the work for one fixed price, regardless of cost to the contractor

**Selection Method** – Owners should utilize competitive bidding among general contractors for construction of the entire project under a single contract, as it is the preferred method. Bidding may be from a pre-selected list of bidders, or from anyone who wishes to bid. In public work, and some private work, the bidders must furnish proof of financial capability such as a bond or certified check. When using a pre-selected list on private work, the owner and his architect/engineer should carefully and objectively weigh the capabilities of contractors while assembling the list. After the list

is determined and the bids are received, he should award the job to the lowest bidder. Pre-selection is not possible on most public work.

### **Owner's Requirements**

- Complete, detailed plans and specification
- Adequate professional inspection and supervisory personnel who are experienced in construction, and may be either in house, or outside architects and engineers.
- Staff and consultant proficiency in planning, budgeting, construction feasibility and marketing construction
- Marketable job

### **Advantages**

- Objectivity of selection on private work
- Final price known (assuming no changes in plans and specifications.)
- Less bookkeeping and auditing expense

### **Cautions**

- Owner and contractor may have opposite financial interests
- The complicated procedures required to process changes, and the resulting cost to both parties
- Delayed start until plans are 100% complete, and bids taken
- Reliance on consultants to provide practical construction advice, budgets, and schedules, prior to receipt of bids

## **Comparison Chart**

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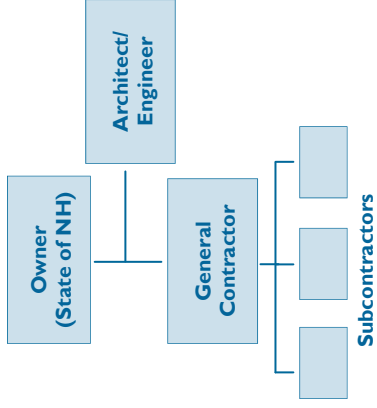
The Associated General Contractors (AGC) of NH Building Committee has drafted the following guidelines for use by project owners when selecting the most appropriate construction contract method.

The complexities and decisions that must be made in order to have a successful construction experience can be overwhelming. This guide is intended to answer some of the questions concerning the three basic types of construction procurement contracts.

We have provided a side-by-side comparison of the three contract types, which includes descriptions and examples of project for which each is most and least suited.

We hope that these materials will provide you, as a project owner, with the information you need to make an informed decision regarding your next construction contract.

On the next page, there is a ***Side-By Side Comparison of Contract Methods***.



## Contract Type

### Lump Sum Competitive Bid

**Definition** A delivery method wherein the owner (NHDOT) selects an architect or engineer to design and develop construction documents from which the owner then solicits lump sum bids. Selection is based on the lowest responsible bid and the contractor serves as a single point of responsibility for construction

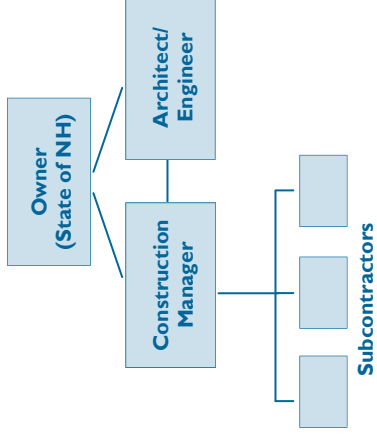
- Pros**
- Familiar delivery method
  - Defined project scope
  - Single point of responsibility for construction
  - Open, aggressive bidding.
- Cons**
- No design phase assistance from contractor
  - Longer schedule duration
  - Price not established until bidding is complete
  - Adversarial relationship
  - Lack of flexibility for change.

### Best Suited

New construction projects that are not schedule sensitive nor subject to potential change

### Least Suited

Complex projects that are schedule sensitive. Projects that are subject to potential change.



## Contract Type

### Construction Management

A method where the construction manager serves as the general contractor providing pre-construction and construction services. The construction manager provides design phase consultation in evaluating costs, schedule, implications of alternative designs, systems and materials during design and serves as a single point of responsibility contracting directly with the subcontractors during construction.

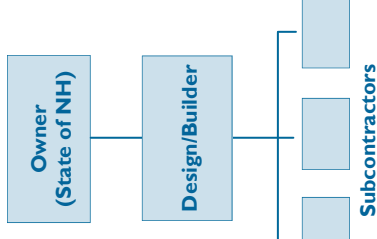
- Pros**
- Selection flexibility
  - Design phase assistance from contractor
  - Single point of responsibility for construction
  - Team concept
  - Faster schedule & delivery
  - Flexibility to make changes in design
  - Adversarial relationship reduced

### Cons

- Difficult for owner to evaluate a GMP (guaranteed maximum price) contract

Larger new or renovation projects that are schedule sensitive, difficult to define, or subject to potential change.

Smaller projects that are schedule sensitive. Smaller projects that are subject to potential change.



## Contract Type

### Design/Build

A method where the owner contracts with a single entity to provide both design and construction. The design/build team consists of contractor, architect and engineer. The design/builder contracts directly with the subcontractors and is responsible for delivery of the project. Selection is based on the proposal offering the best value to the owner.

- Pros**
- Selection flexibility
  - Single point of responsibility for construction
  - Faster schedule & delivery
  - Team concept

- Cons**
- Loss of check & balance system
  - More difficult for owner to manage
  - Potential adversarial relationship between owner and designer/builder

Smaller new or renovation projects that are schedule sensitive.

Projects that are difficult to define and are less schedule sensitive.

## Project Examples

#### 1. DEPOSIT ON PLANS

When a deposit is required on plans and specifications:

- General Contractors should be issued one set of plans and specifications, 100% refundable if returned in good condition. The plans and specifications should be refundable up to two weeks after the award of contract.
- Major subcontractors should be issued one set of plans and specifications, 100% refundable if returned in good condition. The plans and specifications should be refundable up to two weeks after the award of contract. The owner of the project or the awarding agency will define who are the major subcontractors.
- All plan takers shall pay shipping costs for plans and specifications, if not picked up in person.
- Individual sheets of plans and sections of specifications should not be reproduced. Any person who reproduces individual sheets will take on additional liability for the completeness of information contained therein, including all addenda.
- All deposits should be closely related to the actual cost of producing a copy of plans and specifications.
- All the information referred to in this guideline should be defined in the Invitation to Bid.
- The General Contractor will be entitled to a specified number of drawings without charge once the contract has been awarded. If requested, additional sets will be charged at cost.

#### 2. ISSUANCE OF ADDENDA

During the bidding period the issuance of addenda should be minimized to the extent necessary to clarify bidding documents. If addenda are necessary they should be issued promptly. All parties who purchase a complete set of documents should be issued addenda. Questions to the architect/engineer should be in his hands at least seven working days before the bid is due. The last addendum should be in the contractor's hands four working days prior to the day on which bids are due. If this is not possible, an appropriate extension of the bidding period should be granted.

Faxing or e-mailing addenda shall be permissible, as long as a record is kept; verifying that faxes and/or e-mails were delivered to recipients.

#### 3. LISTING OF SUBCONTRACTORS

At the discretion of the Owner, the Architect, or Engineer, the naming of the major Subcontractors on the bid form may be required. Major Subcontractors may be defined as performing at least 10% of the construction dollar volume of the project. The listing of major subcontractors' prices on the bid form should not be required, but could be submitted upon a reasonable timeframe after receipt of bids, perhaps 24-48 hours.

#### 4. TIME AND DATE FOR RECEIPT OF BIDS

In establishing the time and date for receipt of bids, it is recommended that Tuesday, Wednesday or Thursday afternoon be selected. Days before or after a holiday and during the Christmas/New Years week should be avoided. In selecting a date, if similar sized projects are being bid on that same date, another date should be selected to give contractors and subcontractors the opportunity to complete the bid proposal. All bid openings should be open to the public and read aloud. If the bid opening is not open to the public, the bid results should be provided to all bidders as soon as possible.

#### 5. CHANGE ORDERS

- Acceptable mark-ups for additional work should be defined in the Supplementary Conditions, or the Contractor should have the option of proposing their own allowance for overhead & profit in a space on the bid form. The *AIA Guide for Supplementary Conditions: Changes In The Work* is appropriate language for allowance for overhead and profit.
- Generally, time and expense in the home office should be attributed to the mark-up for overhead and profit. Time and expense in the field, including bonds and all general conditions, should be attributed to direct cost.
- All change orders should be processed in a timely manner, considering changes in scheduling and rework. Time guidelines for all parties to submit and process a change order should be included in the Supplementary

Conditions

- Also, whoever is authorized to sign change orders for the owner should be included in the supplementary conditions
- Whenever possible, change orders should be consolidated to minimize extra paperwork and time expense.
- Change of time required as a result of changes in the work should be considered and processed with each individual change order.

## 6. ALTERNATES

- Consideration of the contractors' estimating and bidding process should be of major importance when contemplating alternates.
- Alternates should be minimized. Ideally, they should not be complex. The scope of work required by the alternate should be clearly defined.
- The bidding documents should clearly state whether or not alternates will be considered in the awarding of the contract. If alternates are accepted in a contract, they should be based on the alternates the owner wants. The goal of selecting alternates should never be used to choose a specific contractor.

## 7. ALLOWANCES

Allowance items are included in contracts for two basic purposes:

1. To exert control over the selection of finish materials
2. To include items whose specifications may not be defined when the project goes out to bid.

There are two types of allowance items:

1. Provides for furnishing materials only installation included in the base bid.
2. Provides for furnishing and installation of materials.

Allowances to furnish materials should only be used if the installation and/or assembly of the item can be well defined. If the cost installation and/or assembly of an Allowance item is subject to change based on the material ultimately selected, then it should be included as part of the Allowance item.

The description of all Allowance items is important, and adequate information should be provided in consideration of the contractor's bidding and performance of the project.

The use of Allowances in the contract should be minimized, and reserved for those items that cannot be specified.

## 8. RETAINAGE

- Generally, retainage in some form may be necessary for the protection of the owner and contractor.
- Generally, if the owner does not require retainage, the General Contractor should not retain from subcontractors.
- Bonding does not satisfy the purpose of retainage. Bonds will only take effect in the case of default of a contract whereas retainage will help monitor the performance and timely completion.
- The form and amount of retainage should be considered on an individual basis for each job, and should be identified in the bidding documents.
- Three suggested forms of retainage are:
  1. 5% retainage for the entire project.
  2. 10% retainage until 50% of the project is satisfactorily complete. At that point, all retainage is reduced to 5%, including the retainage for all previously processed requisitions.
  3. 10% retainage until 50% completion, for each line item or work section. After 50% completion no additional retainage is withheld.
- Upon substantial completion of the project, the retainage should be reduced to 150% of the monetary value of the incomplete work.

## 9. BONUSES AND LIQUIDATED DAMAGES

- Bonuses and liquidated damages should only be specified in response to the owner's particular needs.

Determined amounts should reflect real savings or costs to the owner as a result of early completion or delays in the project.

- The bidding documents should specify the amounts of proposed bonuses and damages. The specification should stipulate whether calendar days or workdays would be used in assessing bonuses and damages.
- All delays or changes should be accurately documented, and extensions or reductions of time should be addressed in a change order.

## **10. PUNCH LISTS AND FINAL ACCEPTANCE**

- Punch Lists should be prepared in a timely fashion with owner, architect/engineer and contractor all in attendance.
- Punch List items should be completed as promptly as possible, and completed items should be acknowledged in writing.
- Whenever possible, buildings or portions thereof should not be occupied until Punch List items have been completed or accepted.
- Once the Punch List is reduced to a few items, the cost and time required to complete each item should be determined. Any long-term items and costs related thereto should be isolated. The remainder of the contract, including retainage, should be paid in full.
- Deficiencies that occur in work previously found acceptable should be promptly corrected as warranty items, without causing a delay in the issuance of final payment.

## **11. INSURANCE AND BOND FORMS**

It is generally recognized that the AIA documents, "Owners Instructions Regarding the Construction Contract, Insurance and Bonds, and Bidding Procedures" "Bid Bond," and "Performance Bond and Payment Bond," are accepted as forms which will adequately serve the needs of all parties involved.

## **12. SPECIFICATION ARRANGEMENT**

It is strongly recommended that all building construction specifications be written in the Construction Specification Institute format. In addition, it is noted that CSI and AIA each produce master specifications, which are useful as a guide in specification preparation.

Consistency in format and preparation of specifications is a great assistance to all parties involved.

## **13. SCALE AND ARRANGEMENT OF DRAWINGS**

The Scale and Arrangement of Drawings should be thoughtfully considered. Scales should be appropriate to clearly and accurately represent the scope of work required, and produce drawings suitable for both bidding and construction purposes.

## **14. RELEASE OF LIENS**

Requirements for release of lien should be addressed within the contract, and, when applicable, bid documents. They should include:

1. Who they are required from
2. When they are required
3. The form of release(s) required

Progress lien releases from the general contractor should typically be provided with each of the general contractor's requisitions.

Progress and lien releases from subcontractors and vendors are typically not required for subcontractors and vendors who are providing less than some agreed upon value of the contract. Final lien releases from subcontractors and vendors are not typically required, or subcontractors and vendors who are providing less than some agreed upon total value of the contract.

If the general contractor is required to provide progress lien releases from subcontractors and vendors, then sufficient

time must be allowed to provide them. Specifically, when subcontractor and vendor releases are required to be submitted in conjunction with the general contractor's requisition, such releases shall cover work performed two monthly requisition periods prior. Alternatively, releases covering the prior requisition period may be submitted not concurrently with the general contractor's requisition, but immediately prior to actual payment by the owner.

Final lien releases from the general contractor are typically required upon completion of the project. Final releases from subcontractors and vendors may also be required upon completion of the project. In contracts where retainage is withheld, final releases of lien from the general contractor as well as subcontractors and vendors may be conditional upon receipt of retainage. In this case, the owner may elect to make final payment to the subcontractors and vendors by two-party check.

## **15. NEGOTIATING WITH THE LOW BIDDER**

In a competitively bid procurement process (open or select list), unless specified otherwise in the bid documents, the award should go to the lowest responsible bidder. If bids received are higher than the budget, the owner and architect should:

- Negotiate with the low bidder to see if the reduction needed to get to the budget can be obtained.
- If, after negotiations and price deductions, they are unable to arrive at an acceptable budget, and the low bidder feels he can do no more, the negotiations should stop and the owner and architect may talk with the second low bidder.

If the owner and architect are not successful with the second low bidder then they should redesign and re-bid the project.