

An Owner's Guide To Construction Management

*Assuring Project Success
Under Any Delivery Method*

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Al Gravallesse, Daniel, Mann, Johnson & Mendenhall
Blake V. Peck, P.E., CCM, McDonough Bolyard Peck
Bob Fraga, U.S. Postal Service
Chris Reseigh, Parsons Brinckerhoff Construction Services
Edward Mislavsky, Project Planning Group, Inc.
Gregory Henk, Transportation Corridor Agency
Herb Saunders, Parsons Brinckerhoff Construction Services
Jerry Gold, O'Brien Kreitzberg
Joe McAtee, P.E., Urban Engineers, Inc.
Joseph Whitehouse, Construction Management Services, Inc.
Mike Swanson, DLR Group
Neil F. Katz, Hill International
Richard Cullerton, Metropolitan Washington Airports Authority
Rick Fennema, GREYHAWK North America, LLC
Robert Wilson, F.CMAA, Gilbane Building Company
Robert York, The JCM Group
Ron Pennella, StructureTone
Thomas Quaranta, Parsons Brinckerhoff Construction Services

Construction Management Association of America
7918 Jones Branch Drive, Suite 540
McLean, VA 22102
703-356-2622
www.cmaanet.org

Preface

Construction management evolved as a professional practice distinct from design and construction in the early 1960's in response to increasing complexities in the construction industry. Highly sophisticated construction systems led to the specialization of both design and construction professionals. Additionally, increasing regulatory mandates, litigation and other risks created a need for a new professional to be an advocate for the Owner and bridge the gap between the Owner, the Designer and the Contractor. Today, construction management is well established, and recognized around the world as an indispensable profession.

A Construction Manager (CM) provides the Owner with specialized knowledge, experience and resources to navigate through the complexities of a construction program or project. Construction management services may be tailored to satisfy the needs of the novice or sophisticated Owner. The CM adds value by providing the resources and expertise needed to manage quality, cost, schedule, scope and risks associated with design and construction to help the Owner achieve its objectives.

A major construction effort is a complex and risk-laden venture. It involves the expenditure of a large sum of capital as well as the application of technologies of which many are aware, some are conversant, but few are expert. It requires the Owner to do business with several groups of people whose interests are not its own and to venture into a field with its own set of rules, some of which are not written down anywhere. It is an intensive process demanding constant attention in order to achieve success.

The federal government has a construction budget that is measured in billions of dollars and a plan for accomplishment that is measured in decades. Many state governments have construction efforts of hundreds of millions of dollars and multiple years. Although the federal and state governments have standing staffs to manage their typical construction program, they often need specialized expertise or supplemental staff to help manage certain projects.

Smaller government organizations are like smaller businesses, having the same organizational needs for construction expertise matched against an equal need to reduce expenses. Moreover, many times the smaller private Owner cannot afford to build a staff and fully develop sufficient expertise to embark upon a construction program.

The use of professional construction management services to oversee all or parts of the planning, design and construction process is recognized in both the public and private sectors as an effective and efficient means of achieving successful delivery of constructed projects under any contract format.

The Construction Management Association of America (CMAA) presents this document as a guide to public and private Owners in selecting a critical component of the construction project: the CM.

This guide will benefit those Owners who will embark on a construction project and who will seek expertise in the planning, design and construction process. It introduces the construction management practice and describes how it can enhance the success of a project.

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Executive Summary

Professional CMs can be instrumental in achieving successful construction projects and may be used in a variety of contracting methods and project delivery systems.

There are many issues an Owner must consider in undertaking a project, such as time and cost constraints, the need for flexibility, pre-construction service needs, design process interaction, and financial constraints. The project team should enhance and reinforce the strengths of the Owner to provide a comprehensive set of resources and skills to accomplish the project.

While a wide and somewhat bewildering variety of ways to organize a project have been developed to satisfy the needs of Owners and projects, all share the same basic set of players: the Owner, the CM, the Designer, other consultants, Contractors, and Subcontractors. Regardless of resources, Owners must choose a particular organization, contract and award, and combine them into a desired and appropriate contracting method for each project.

Construction management is a professional services discipline applied to the planning, design and construction process of capital improvement projects. Professional CMs address the needs of projects and Owners by providing management services and expertise tailored to project needs and independent of the chosen contract format or project delivery method. It is this management approach that makes construction management unique. CMs apply and integrate comprehensive project controls to help manage the critical issues of time, cost, scope, quality and safety.

As an Owner, it is necessary to choose a project delivery method and contracting format that efficiently delivers the project. A *contracting format* is an arrangement for the distribution or allocation of construction project risk (most frequently cost or performance risk) between the parties to a contract. A *project delivery method* is designed to achieve the satisfactory completion of a construction project from conception to occupancy. Construction management has been used successfully in *all* contracting and delivery systems by Owners who do not continuously maintain the staff expertise or numbers necessary to deal with the complex responsibilities involved in the management of major projects. In addition, the CM usually helps the Owner identify which delivery system is best for the project.

A number of contracting formats exist including fixed price, guaranteed maximum price, cost plus fixed or variable fee, and unit price contracts.

Construction projects in the United States have traditionally been delivered through the design-bid-build project delivery method. Because of financial, organizational and time constraints, alternative project delivery methods have evolved to fit particular projects and client needs. These include multiple primes; developer manager; design-build; and design, build, operate and transfer.

Construction management comes in two general forms. In *agency construction management*, the Owner utilizes a CM as its principal agent to advise on or manage the process over the life of the project regardless of the project delivery

Construction management is a professional services discipline applied to the planning, design and construction process.

method used. In *construction management at risk*, the Owner utilizes a CM to consult in the Pre-Design and Design Phases of a project. However, the CM's role also includes a construction performance role during the Construction Phase. At that time, the CM converts to the legal equivalent of a general contractor once a price is established for the completion of the construction work.

Typically, professional construction management services are procured on the basis of an objective evaluation of the qualifications of competing firms. As is the case with any professional service contract, the issue of price does not enter into the ranking of construction management firms based on their qualifications. The Owner and the selected CM then jointly, through negotiation, develop a final scope of services to support the timely delivery of the project. Development of a construction management budget grows out of this scope and is the first step in the detailed planning of the project. Among the methods recognized and commonly used in the compensation of firms for professional construction management services are salary times multiplier plus direct expenses, billing rates, and cost plus fixed fee.

1.0 Defining Construction Management

There are several issues an Owner must consider in the selection of a method of accomplishing a project:

- **Time needs of the project**—Does it have to be done quickly? Will the schedule be affected by outside influences? Will the schedule be lengthened by cash flow considerations?
- **Needs of the project for flexibility**—How much change will be required during the construction? How much of the project will be fully defined by the Owner and Designer prior to its being constructed? If other than the Owner, how much influence will the user have over the design and construction?
- **Preconstruction service needs**—How much assistance will the Owner need in the definition and planning of the project with respect to quality and safety, and with respect to cost versus scope versus time?
- **Design process interaction**—How well does the Owner understand the design process and the cost impacts of decisions made in the course of design development? How complex is the design process for the project?
- **Financial constraints**—How is the project financed? How does the financing influence the schedule, type of contract, risk and other requirements of the project?

The Project Participants

While a wide and somewhat bewildering variety of project organizations have evolved over time to satisfy the needs of Owners and projects, all share the same basic set of players:

- **The Owner**—The private or public organization ultimately responsible for the proper execution of the project.
- **The Construction Manager (CM)**—A provider of professional services to the Owner, the CM organizes the effort, develops the management plan, monitors the participants' progress against the plan and identifies actions to be taken in the event of deviance from the plan. The CM also provides expert advice in support of the Owner's decisions in the implementation of the project. The CM can be a firm, a team of firms, or an individual.
- **The Designer(s)**—Employed by the Owner to provide design services in support of the project. While Designers can be contractually responsible to the Owner, they report progress to the CM and are monitored by the CM for compliance with the scope statement and both the design and construction budgets.
- **Other Consultants**—Providers of specialized services, such as real estate acquisition firms, geotechnical engineering firms, environmental engineers,

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permitting consultants, etc., employed by the Owner in support of the project. Their efforts are coordinated and monitored by the CM.

- **The Contractor**—The organization or individual who undertakes responsibility for the performance of the work, in accordance with plans, specifications and contract documents, providing and controlling the labor, material, equipment, and subcontractors to accomplish the work.

Needs of the Project

Several forms of project organization have been developed that are designed to meet the needs of specific projects and Owners. The integration and coordination of the complex interrelationships occurring in a typical construction process require substantial expertise. Some Owners may have extensive operational organizations with vast knowledge of the business of the Owner or of a particular facet of the construction industry such as finance or building maintenance. Other Owners may not have the organizational resources or expertise on board to meet the needs of a particular project. Whatever level of expertise the Owner may have, the organization of a project can be designed to enhance and reinforce the strengths of the Owner's existing staff to provide a comprehensive set of skills to accomplish the project.

Expertise applicable to virtually any project includes:

- Project scope development
- Land acquisition
- Permitting
- Financing
- Cash flow management
- Design acquisition and management
- Cost estimating
- Cost and schedule control
- Contract administration
- Document control
- Construction inspection
- Quality control
- Value engineering
- Risk management
- Constructibility review
- Contracting and project delivery systems
- Dispute avoidance and resolution
- Commissioning
- Activation

Construction management is a professional services discipline applied to the planning, design and construction process. CMs provide a program of management techniques and expertise tailored to Owner and project needs and independent of the chosen contract form or project delivery method. It is this

management approach that makes construction management unique. CMs apply and integrate comprehensive project controls to manage the critical issues of time, cost, scope and quality. It is the matching of services to project/Owner needs that makes construction management a cost effective approach to managing project delivery.

A significant advantage of using a CM is that the organizational structure is not dependent on a single model or set of models. Generally, CMs fall within two categories, “agency” or “at risk.”

In “agency construction management” the CM assumes the position of professional advisor or extension of staff to the Owner. The Owner lets most of the contracts, and certain cost and performance risk is placed on the Contractors. In these cases, the CM is in a position to offer advice unencumbered by any interests other than those of the Owner and the project. The term agency infers, as is intended, a delegation of function to the CM by the Owner. As a consequence, it is possible that certain tasks and responsibilities place the CM in a legal agent relationship with the Owner. The necessity for openness and candor between the CM and Owner is paramount.

When the CM’s role includes a construction performance function, it is known as the “CM-at-risk” approach. In this approach, which can often occur under a guaranteed maximum price (GMP) contract format, the CM will assume additional obligations and will undertake construction responsibilities during the Construction Phase. At that time, the CM is typically placed in a legal position similar to that of a Contractor entering into a traditional construction agreement which provides for the completion of the construction work for an established price.

Regardless of the form of contract agreement, the CM is performing professional tasks throughout all the phases of program project implementation. A contract agreement will establish the scope of services and will also define the relationship of the parties.

2.0 Contracting and Project Delivery Systems

As an Owner, it is necessary to choose an overall project delivery and contracting strategy which efficiently delivers the project. An understanding of the difference between a project delivery method and a contracting format is important because it impacts these decisions.

Contracting Formats

A *contracting format* is an arrangement for the distribution of construction project risk—most frequently cost or performance risk—between the parties to a contract. Cost risk is the risk of being able to do something within a given budget limit. This risk distribution is accomplished through methods of arriving at or limiting the amount of money to be paid. Performance risk is the risk of being able to complete the project on time and at the level of quality as agreed. This is distributed through the technical terms of the contract, either by describing requirements for the finished product only, or by describing specific methods by which a task is to be performed. Contracting formats require some form of specific scope statement in order for the parties to make an accurate economic judgment as to cost or price.

A number of contracting formats have evolved as a result of the desire of Owners or Contractors to either shift or share the risk (usually cost) of a project through contractual provisions or to increase the speed of delivery of construction.

Public, and quite frequently private, works are usually procured through a sealed bid, fixed price contract or the equivalent. In these contract arrangements, most of the price risk is intended to shift to the Contractor. In order to provide a reasonable and enforceable scope definition to the Contractor so that bids can be developed, fixed price contracts are almost always based on a completed design. The need to have a completed design in hand prior to the commencement of construction requires a longer lead time for the construction process and requires a linear approach to project delivery that reduces flexibility.

Seeking more flexible alternatives, the private sector developed a host of risk-shifting and risk-sharing contract variations, including negotiated fixed price, guaranteed maximum price (GMP), cost plus fixed or variable fee, time and material, unit price, prepurchasing, and others. These contracts run the spectrum from the lump sum, where all of the cost and schedule risk is placed on the Contractor, to cost reimbursable situations, where the Owner agrees to pay all costs. Most of these methods are now also being implemented, to some extent, by public sector Owners.

Performance risk shifts are accomplished by the writing of end-product or performance contracts. When applied to a complete project, these are typically known as design-build contracts. If this form is coupled with a GMP, theoretically the Owner has little risk either in cost or satisfaction beyond the GMP. Since a substantial part of the desired outcome from these projects is subjective, the

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risk of misunderstanding is large and can easily result in either disputes over what is included in the GMP or in disappointment on the part of the Owner in the final project as delivered.

Project Delivery Methods

A *project delivery method* is a system designed to achieve the satisfactory completion of a construction project from conception to occupancy. A project delivery method may employ any one or a number of contracting formats to achieve the delivery. Project delivery methods define scope as part of their process.

Construction projects in the United States have traditionally been delivered through the design-bid-build sequence, securing the services of a Designer who will design the project, aid in the procurement of a Contractor, and often inspect the work of the Contractor for compliance with the specification. This sequence usually leads to the sealed bid, fixed price contract believed by many to offer the least capital cost to the Owner as well as the one generally required by public procurement regulations to assure fairness in the procurement process. However, this “traditional” project delivery system allows the use of many contracting methods, since there is no inherent constraint on the allocation of price risk.

Because of financial, organizational and time constraints, other project delivery methods have evolved to fit particular projects and client needs. These include:

- **Multiple Primes**—The Owner uses separate contracts for various construction disciplines such as general construction, structural, mechanical, electrical, etc.
- **Developer Manager**—The Contractor will acquire (or have constructed) a facility to suit the needs of the Owner who in turn commits to lease the facility.
- **Design, Build, Operate and Transfer**—The Contractor will design, build, operate and maintain a facility for a fixed period before transferring it over to the Owner.
- **Design-Build**—The Owner utilizes a single contract to acquire the services of both Designer and Contractor to construct a facility.

These delivery methods all share the characteristic of placing the Owner in what is a potentially unequal relationship with the Contractor. These systems may at times require the Owner to place the fate of the project in the hands of an organization or organizations whose interests may be in conflict with those of the project or of the Owner, due to contractually assigned risks.

In addition, these delivery methods all share the same disadvantages in that the Owner is required to have sufficient staff resources to fully define the project or be willing to allow another entity to define it. The Contractor or Designer or Developer has clear risks that it has assumed in its arrangement with Owner and has developed the expertise to manage these risks.

Parties who bear the risk in an endeavor are due their rights to control their destiny. The greater the risk profile, the greater the need to control. Loss or perceived loss of control leads to fear of a negative outcome. This fear leads to an assertion of the right to control, resulting in frequent disputes. Therefore, the key to successful management of the construction process is the placement of risk in the hands of those who are best equipped to manage it.

3.0 Why Construction Management?

Construction management has been used successfully in *all* delivery methods for Owners who do not continuously maintain the staff expertise or numbers necessary to deal with the complex responsibilities involved in the delivery of major capital projects. The CM frequently helps the Owner identify which delivery method is best for the project.

The construction management approach utilizes a firm (or team of firms) with construction, design and management expertise to temporarily expand the Owner's capabilities so that the Owner can successfully accomplish its program or project.

A CM frequently has a role in both traditional and alternative project delivery methods as a trusted advisor to the Owner in oversight of the party at risk in the arrangements. In such cases, the CM may have a reduced scope of work, but participates in the decision-making process on behalf of and in concert with the Owner. This can be particularly helpful in design-build where substantial scope definition responsibility and project control have been assigned to the design-builder, and there exists no natural check on the design-builder.

CM as Agent or At Risk

As previously mentioned, construction management comes in two general forms:

- **Agency CM**—The CM acts as the Owner's principal agent to advise on or manage the process from project conception to completion.
- **CM at risk**—The CM provides professional management assistance to the Owner prior to construction and advice on constructibility, budget and schedule considerations. The CM later converts to the equivalent of a General Contractor during construction.

The key difference between these two forms is that the CM at risk is in fact a distinct delivery method due to its responsibility for construction performance. Agency construction management, on the other hand, is a distinct set of services that can be applied to any delivery method.

Role of the CM

Use of a professional consultant in construction management improves the Owner's confidence in the success of the project. This enhanced confidence grows out of the ability of a professional CM to make expert recommendations regarding:

- Most effective use of available funds
- Enhanced control of the scope of the work
- Optimal project/program scheduling options

Construction management includes a significant component often missing from project delivery systems—a comprehensive management and control effort

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- Best use of individual project team members' expertise
- Maximum avoidance of delays, changes and claims
- Enhanced design and construction quality
- Optimum flexibility in contracting/procurement options

Construction management includes a significant component often missing from the project delivery systems—a comprehensive management and control effort applied to the project for the Owner, beginning in the early program planning stages and continuing through project completion. It involves the application and integration of comprehensive project controls to the design and construction process and generally includes the following:

- Development of a written scope understood by all of the participants
- Development of thorough design criteria for issue to the Designer
- Design quality assurance throughout the design process
- Consideration of material, systems and process alternatives
- Constructibility review
- Code compliance review
- Milestone cost estimating—to ensure design complies with the budget
- Matching construction spending to funds availability
- Construction specification enforcement
- Continuous schedule enforcement

The implementation of these management activities turns the planning, design and construction process into one which maximizes the Owner's control over the project's scope, quality, time, and cost, and adds predictability of the outcome of the project from start of programming to completion of construction.

Early development of the scope of the project provides information for the establishment of a baseline budget and schedule. Because of the continuous monitoring of the schedule and project cost during the progress of the project, the impact of changes and new information on this baseline can be evaluated and corrective action taken when most effective. Well formulated and priced construction bid packages, developed during the planning and design process, are the key to minimizing changes and avoiding disputes and delays during construction. This is the Owner's most powerful tool in assuring a positive outcome for the project.

The addition of a CM does not lessen the Owner's control over the project, but enhances it through the Owner's acquiring as adjunct staff an organization of experts in the design and construction process that will enable the Owner to make informed and timely decisions during the evolution of the project.

When an Owner implements a program or project using a consultant CM, it allows the Owner to make use of the expert advice available, advice that is unaffected by any potential conflict of interest. The Owner is still able to obtain the advantages of the many procurement methods, but with much greater control over and confidence in the outcome.

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4.0 Selecting the CM

CMAA recommends the selection and use of a CM for projects which are complex by virtue of their nature or size, or for which the Owner does not have an adequate capacity to manage the project effectively.

Typically, professional services of this sort are procured on the basis of an objective evaluation of the qualifications of competing firms. There are accepted practices that are used by both private entities and public bodies to select the best qualified CM for the project.

Preliminary Decisions and Information

At the outset of the CM selection process, certain information should be documented and certain decisions should be made regarding the concept of the project and the needs of the Owner in realizing project objectives.

A brief, detailed description of the project, including size, purposes, goals and objective parameters, must be developed in order to convey to the CM proposer the activities and approximate level and type of skills that will be necessary. If any studies or other documents are available, they should be called to the attention of the proposers.

The Owner's needs and expectations with respect to scope, schedule and budget should be included in the description. Finalization of schedule should not take place until the selected CM has advised the Owner regarding the achievability of the proposed schedule and associated project cost.

Owner's Internal Delegation and Management.

On all projects, the ability to react to changing circumstances is critically important. The project decision-making process must be designed to deliver informed decisions in the most timely manner possible. It has been said that the most frequent cause of project disruption is delayed decisive action.

It is very important that contractual authority—authority to obligate the Owner to pay money—be delegated to a qualified individual or small group of people so that decisions can be rendered in a timely manner and by those who are most familiar with the project. These decisions may concern change orders, contracts, dispute settlements, minor purchases and contracts in support of the project.

Some Owners' governing bodies may establish budget guidance for parts of a project, with specific decision authority within those budgets delegated to a part of the permanent staff, subject to review. These practices are highly recommended so that the Owner will gain credibility with the Contractor and consultant community.

Decisions with regard to the project organization, as envisioned by the Owner, including the reporting relationships among the Owner and all other parties to the design and construction effort, should be made and summarized for reference in the selection process.

Professional services are procured on the basis of an objective evaluation of the qualifications of competing firms. There are accepted practices used by both private entities and public bodies to select the best qualified firm

The committee is responsible for one of the most critical decisions in the project—the selection of the CM

The Selection Committee.

A CM selection committee should be formed from the Owner's staff early in the selection process so that the committee can learn as much as possible about the project and the Owner's expectations of the CM.

The committee is responsible for one of the most critical decisions in the project—the selection of the CM. The committee will be comparing the approaches offered by several firms, their skill levels and the experience of their personnel, with the expectations and needs of the project and the Owner's organization. Each individual on the committee should understand how the selection process will be structured. The committee should include the individual on the Owner's staff who will be responsible for the project.

While it is not necessary that all members of the committee be familiar with the design and construction process, at least one member should. If the Owner does not have an individual on its staff who can provide this expertise, it may be appropriate to retain a consultant for the selection process. Individuals such as senior members of the engineering or architectural community can be used for this purpose. It is also important that the committee be free from any conflict of interest in the selection of a CM.

Qualifications Based Selection of the CM

Laws and regulations generally govern the process of selection for public work, and practices will vary among the states. The process, however, generally follows three steps: a statement of qualifications; a technical proposal; and a price proposal and fee negotiation.

Statement of Qualifications.

A request for qualifications (RFQ) should be advertised in national and local publications which will reach the CM community. The requested statement of qualifications is usually a document which describes in general the qualifications of a firm (or team of firms) to perform the work. It will often include the following types of information:

- Firm name and address
- Types of services usually offered
- Names of principals
- Numbers of staff, organized by discipline
- Description of similar work completed including date, size and Owner contact
- Description of similar work in progress, including date, size and Owner contact
- Annual volume, backlog and capacity
- Record of performance; i.e., cost control, quality, schedule, and safety

Federal Standard Form (SF) 254 contains substantially this same type of information and is maintained by most firms. A related form, SF 255, contains similar data and is designed to specifically address a particular project.

The selection committee should evaluate the firms' submissions and make a judgement as to which firms appear qualified to perform the work. This will have the effect of reducing the number of competing firms to what is commonly known as a "short list."

The RFP should be drafted with the understanding that...the more consistent the presentations by the respondents the easier the evaluation will be

Technical Proposal.

Those that are judged to be qualified are requested to submit a technical proposal. This solicitation, issued as a request for proposal (RFP), is a request for information about a firm's qualifications and intentions to perform the services desired. The technical proposals are usually written for a specific project.

The RFP should provide prospective respondents with a description of the project and information regarding the method of compensation. Additionally, the RFP should contain information about the project such as the project budget, major constraints, unusual services that may be required, and particular goals of the Owner.

If the Owner has sufficient understanding of the expected scope of services, it may be advantageous to organize the RFP on that basis. The RFP may also be organized as a series of questions to be answered by the respondents.

The RFP should seek the following information from the proposers:

- The respondent's approach to the project in terms of organization, process, tools and techniques, staff and quality assurance/quality control, etc.
- The respondent's experience with projects of similar nature, including Owner references
- Resumes of key staff to be assigned full time and those to be available as resources

Owners should keep in mind that proposals are often a CM's largest non-project expense. CMs appreciate an RFP that allows them to efficiently present their qualifications. It is appropriate for the RFP to include the criteria for the evaluation of the proposals as well as the weighting to be used.

It is desirable for the selection committee to be involved in the development and organization of the RFP. The RFP should be drafted with the understanding that the selection committee will have to evaluate a number of technical proposals and that the more consistent the presentations by the respondents the easier the evaluation will be. A mandatory outline of the technical proposal is useful in organizing the data for comparison by the selection committee. Additionally, a page limitation is suggested to keep the presentations to a manageable size. The page limitation should not include data such as resumes and brochures. The RFP should be examined by an experienced person for clarity and internal consistency.

Evaluation Process.

The evaluation process may be time consuming and difficult. The selection committee should proceed with a logical and methodical evaluation of each proposal and grade each against the evaluation criteria stated in the RFP. The final ranking of CMs should be determined by averaging ranks assigned by each panelist rather than averaging the panelists' scores. This serves to reduce the influence of any one member of the panel and to ensure that the relative best of the proposals are identified. The CM proposal with the best average numerical ranking should be selected as the finalist to proceed to the next steps of submitting a cost proposal and negotiating the work effort.

In some cases, more than one respondent may appear qualified, and interviews or oral presentations may be the only appropriate method to differentiate between the top respondents. Interviews should be scheduled to provide the respondents with the best opportunity to show their capabilities. Questions

The compatibility between those of the CM and those of the Owner is a critical consideration... the CM will be a trusted part of the Owner's project team

Unless the RFP is extremely detailed and specific, the total costs of two proposals will probably not be comparable

The Owner and the selected CM should jointly agree on a final scope of services designed to support the timely delivery of the project

should be formulated in advance by the selection committee to clarify points in the RFP response and to stimulate contrasting views among the respondents. Since the Owner will be placing the fate of the project into the hands of the CM, the compatibility between the goals and culture of the CM and those of the Owner is a critical consideration. On large or complex projects, where the competition is close, two or more rounds of interviews may be necessary (keeping in mind, however, that preparing for interviews can be extremely costly for a consultant).

Price as a Part of the Proposal.

As is the case with any professional service contract, the issue of price should not enter into the ranking of CM firms based on their qualifications. The selection committee should keep in mind that the CM will be a trusted part of the Owner's project team and that the most important factors are the capabilities of the selected CM.

Some Owners will request a cost proposal as a part of the RFP. This can be useful in evaluating the thought given to the approach to the project and the proposer's organization for it. Price proposals included as part of the RFP response may also save time in the negotiation of the agreement.

Unless the RFP is extremely detailed and specific on the issues of cost, the total costs of two proposals will probably not be comparable. Scopes of work as envisioned by each proposer may not be the same, particularly in assumptions about staffing levels. Qualifications of personnel may be sufficiently different to cause significant difference in price as well as level of service. Costs or multipliers (of cost) may be structured so as to appear lower than they effectively are. One proposer's direct cost may be included in the multiplier or assumed to be furnished by others. In essence, costs in the proposal stage are very soft numbers and should be analyzed in detail and with great care before comparisons are made.

When price proposals are solicited with the RFP, they may be required to be submitted in a separate, sealed and labeled envelope to be opened only when the qualifications-based selection phase has been completed.

Negotiation and Development of Scope of Services and Cost.

Upon evaluation of the responses to the RFP, the firm judged most qualified is requested to provide a proposed scope of services. After thorough discussions designed to assure that both parties are in agreement on the desired level of service, the selected CM prepares a written scope of services proposal.

Decisions made and approaches discussed at this time will ultimately affect the success or failure of the project. Definition of necessary tasks and the application of estimated labor and expense to each task is an efficient way to develop a budget. To be addressed in the scope of services are:

- Development of a specific project scope statement
- Development of procurement strategy
- Development of a project schedule and budget
- Acquisition of special consultants
- Acquisition of Designers
- Acquisition of Contractors and Suppliers
- Quality, cost and schedule control
- Testing, startup and turnover

The scope of services should include deliverables or other tangible methods for measuring performance. Where applicable, physical examples of reports or other expected outcomes should be included or referenced. CMAA's *Construction Management Standards of Practice* is not intended to be a scope statement in support of a contract, but it provides information about the functions typically provided by a CM.

The Owner and the selected CM should jointly, through negotiation, agree on a final scope of services based on the selected CM's scope proposal and designed to support the timely delivery of the project. Development of a CM budget grows out of this scope and is the first step in the detailed planning of the project.

If the Owner and the most qualified CM are not able to reach agreement on price and scope, negotiations are commenced with the next qualified firm.

Methods of Paying for Services

Several methods are recognized and commonly used in the compensation of firms for professional construction management services. All result from a negotiation between the Owner and the CM as to the proper level of staffing for particular tasks that constitute the CM's scope of services.

Salary Times Multiplier Plus Direct Expenses.

A typical approach is based on a CM's direct salaries times a multiplier. The multiplier is a number that is derived from the sum of the CM's indirect salary costs (such as FICA and unemployment insurance and salary benefits) and overhead costs (general and administrative office and other indirect costs) divided by the total salaries paid. This ratio is used by the CM to recover these costs. An agreed profit rate is then applied to the product of the direct salary times the multiplier. Direct project expenses are paid separately. Frequently, an administrative or handling charge may be made on the direct expense.

Salaries are the actual salaries of the individuals working on the project. Direct expenses are the necessary and ordinary expenses associated with the CM's performance. These may include items ranging from paper and pens, to automobiles, travel, separate offices, furniture, computers, software, etc. Some Owners may provide office space or buy some equipment for the use of the CM during the project to avoid lease payments. Some direct expenses may be avoided by use of Owner assets.

Billing Rates.

An alternative to the use of salary times multiplier is the use of classified billing rates. These rates are typically based on average salaries for a specified range of employee skills, experience and education. An amount of money is added based on the CM's overhead and profit multiplier and the resultant sum is used for all individuals in that classification. The classifications have to be carefully defined to avoid confusion.

Cost Plus Fixed Fee.

Some payment arrangements fix the amount of fee (profit) that the CM will be paid to a lump sum. These arrangements also spell out how and in what increments the fee will be paid. The CM is paid actual salaries times a

Compensation for professional Construction Management services results from a negotiation between the Owner and the CM as to the proper level of staffing for the scope of services

The use of standard forms increases the predictability of project outcomes and the consistency of pricing

multiplier to cover all overhead costs and a separate lump sum as profit. The Owner should recognize that payment of the fee should be related to time, progress or other factors.

Fee as a Percent of Construction Cost.

This form of compensation is not recommended as it is arbitrary and not related to the effort that may be required. For example, a greater effort may be required for a smaller dollar value project due to technical complexity or schedule compression.

Standard Contract Forms

A number of organizations publish contract forms related to the design and construction industry. CMAA provides a number of model forms of agreement specific to the implementation of construction management services for use by CMs and Owners:

- **CMAA Document A-1** Standard Form of Agreement Between Owner and Construction Manager (for Agency); or
- **CMAA Document GMP-1** Standard Form of Agreement Between Owner and Construction Manager (where a Guaranteed Maximum Price will be provided).

Other published standard forms compatible with these CM agreements are:

- **CMAA Document A-2** Standard Form of Contract Between Owner and Contractor
- **CMAA Document A-3** General Conditions of the Construction Contract; Owner-Contractor Contract
- **CMAA Document A-4** Standard Form of Agreement Between Owner and Designer
- **CMAA Document GMP-2** Standard Form of Contract Between Construction Manager and Contractor
- **CMAA Document GMP-3** General Conditions of the Construction Contract; Construction Manager-Contractor Contract

The advantages of CMAA standard forms of agreement are:

- They provide the most detailed specification of the duties of the CM.
- The Owner-CM agreement is fully integrated with the Owner-Designer, General Conditions and Owner/CM-Contractor agreements.

Use of standard forms increases the predictability of project outcomes, increases the consistency of pricing, and simplifies management. The forms are regularly updated and maintained consistent with the industry practice. Standard forms may be modified as required by the project or the Owner's needs, but such modifications should be undertaken only with the advice of an attorney knowledgeable of the forms and the implications of changes to them.

CMAA Publications

Additional information on construction management such as services provided, definitions, and procedures may be obtained from CMAA. Following is a list of pertinent available publications:

- Construction Management Standards of Practice
- Contract Administration Procedures
- Time Management Procedures
- Quality Management Guidelines
- Cost Management Procedures