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HOW TO HIRE A

CONSTRUCTION MANAGER

*For Your Energy
Efficiency Projects*

Gray Davis, Governor



CALIFORNIA ENERGY COMMISSION

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This document is one of a series of publications contained in the Energy Commission's *Energy Efficiency Project Management Handbook*, which is designed to help local governments, schools and other public entities successfully implement energy efficiency projects in their facilities.

For information on how to obtain a copy of other publications, contact the Nonresidential Buildings Office at (916) 654-4008. All documents can be downloaded from the Energy Commission's Web page at:

www.energy.ca.gov/reports/efficiency_handbooks/index.html



How to Hire a Construction Manager For Your Energy Efficiency Project

Energy Efficiency Project Management Handbook

California Energy Commission
Energy Efficiency Division

Once you have determined which energy efficiency measures will be implemented and you have secured financing, the next step is to decide how to install your improvements. Will you use in-house staff or hire an outside Construction Manager to oversee the project?

This handbook will help to determine if you need a Construction Manager. The decision should be addressed before preparing the energy audit to ensure that the costs for a manager’s services are included in the budget.

If you are considering using an Energy Services Company (ESCO), you may also find this document useful — ESCOs typically serve as Construction Managers.

In this handbook, the term “owner” is synonymous with the organization that makes the decisions for your facilities. Examples of organizations include, school and college districts, hospital boards, city or county government or special districts.

Contents

I.	What is a Construction Manager?	1
II.	Do You Need a Construction Manager?.....	4
III.	How Do You Determine the Services You Need?	15
IV.	How Do You Estimate Construction Manager Costs?	20
V.	How Do You Prepare the Documents to Hire a Construction Manager?	22
VI.	How Do You Choose the Right Construction Manager?	31
Appendix A – Additional Information		A-1
Appendix B - Sample RFP/RFQ		B-1
Appendix C - Recommendations for Scope of Work for the Construction Contractor		C-1

I. WHAT IS A CONSTRUCTION MANAGER?

A Construction Manager (otherwise known as a “CM”) is an individual or firm contracted by your organization to oversee the construction and installation of energy efficiency measures in your buildings.

Hiring a Construction Manager allows you to transfer the duties of your energy project from your organization’s staff. It should be emphasized, however, that your organization remains responsible for the project even if you hire a Construction Manager. If the project fails or is left incomplete, it is your staff that may be held accountable. A project’s success or failure ultimately resides with your organization; responsibility cannot be contracted out.

A. Do you need a Construction Manager?

No, not if you have a knowledgeable, trained and available staff. Hiring a Construction Manager, however, will expedite the construction and installation of your energy efficiency measures.

B. What Are the Duties of a Construction Manager?

Typically, a Construction Manager will:

- Develop the project’s overall approach
- Assist in developing construction and commissioning schedules

- Assist in developing construction drawings and technical specifications
- Manage the selection of contractors, including the bid process and the award
- Facilitate the writing of the construction contract
- Provide on-site construction management and inspection services
- Control and monitor costs
- Develop or direct project testing, commissioning, and acceptance requirements
- Ensure the project complies with all applicable environmental, health and safety rules and regulations, building standards and codes, and other regulatory requirements
- Prepare and submit progress reports to the owner
- Ensure that the operation and maintenance staff is properly trained
- Ensure that the owner receives operation and maintenance manuals, operation and maintenance procedures and checklists, and recommended spare parts lists
- Submit “as-built” drawings and other documents to the owner in a well-organized form

C. How Does a Construction Manager Fit into my Project Team?

A typical project management team has four parts with these responsibilities:

- **In-house Staff**

Your organization's staff can include administration, maintenance, and others. Their duties include:

1. Identifying the tasks that the Construction Manager is to accomplish, preparing bid documents for those services, evaluating the bids, and then selecting the winning bidder
2. Overseeing and directing the Construction Manager
3. Resolving any contractual issues with the Construction Manager, designer, and general contractor

- **Construction Manager (CM)**

Hired by your organization, the manager is responsible for planning, organizing, leading, staffing, and controlling the installation of your energy efficiency measures and hiring the designer, commissioning agent and others to complete your project.

- **Designer**

An engineering firm, hired by either your organization or by the Construction Manager, produces the needed design documents and equipment specifications.

- **General Contractor (GC)**

Hired by your organization or the Construction Manager, the contractor installs or constructs the energy efficiency measures to the specifications outlined in the construction and contract documents.

D. What Are Typical Construction Manager Contract Arrangements?

Unless it is specified in your bid documents and the resulting contract, Construction Management services do not include the cost for hiring such specialists as building inspectors or engineers. However, the Construction Manager is often responsible for overseeing the work of these specialists.

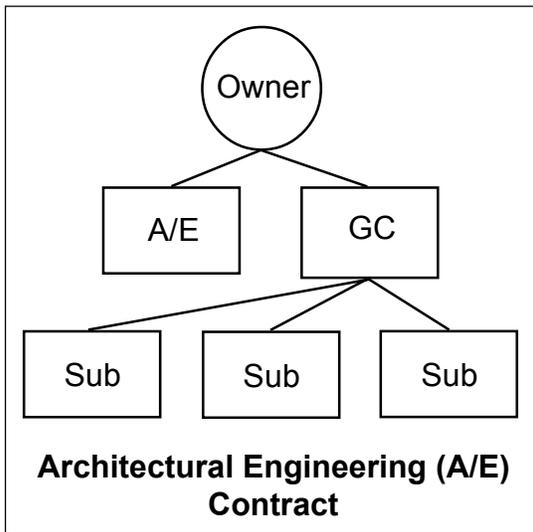
The project team can arrange contracts to work in several ways. Any of the following arrangements will help to ensure the smooth completion of your energy project. The following is the key to the abbreviations used in these arrangements:

A/E = Architectural engineering firm
GC = General contractor
Sub = Subcontractor
CM = Construction manager

- **Architectural Engineering (A/E) Contract**

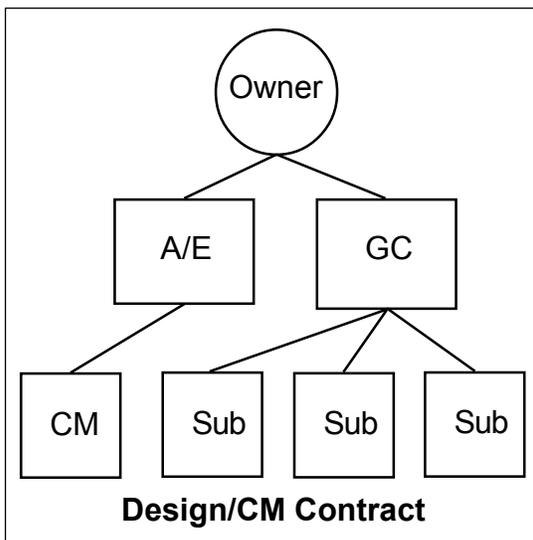
An A/E firm provides the full range of services including project identification, analysis and design services. Some firms can provide construction management services (such as field visitations), and contract administration functions (like reviewing payment requests and reviewing

shop drawings). Your organization has a separate contract with the general contractor.



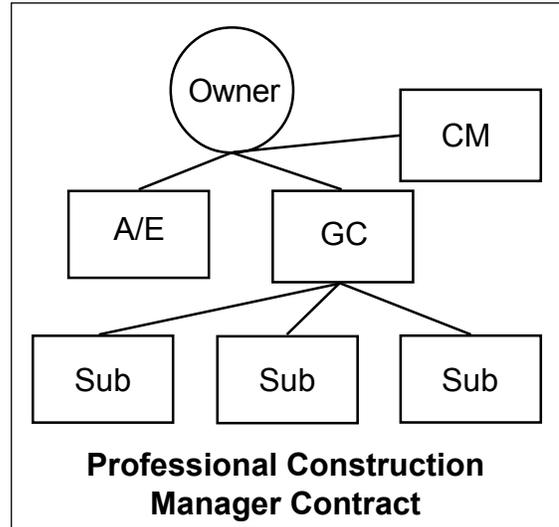
- **Design/Construction Manager Contract**

This is similar to the traditional Architectural Engineering contract just described, except the A/E firm also provides Construction Management services such as scheduling, cost control and quality control. Your organization has a separate contract with the general contractor.



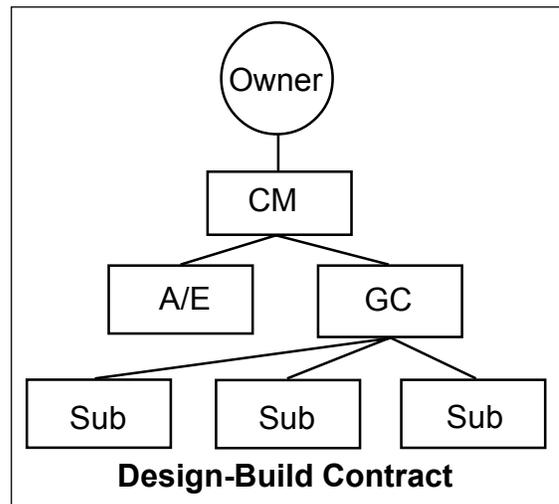
- **Professional Construction Manager Contract**

Your organization has separate contracts with the Construction Manager, the Architectural Engineering firm and the general contractor.



- **Design-Build Contract**

A single company under contract with your organization handles all design, construction and construction management. The Construction Manager in this case may also be known as a Capital Expenditure Manager (CEM).



II. DO YOU NEED A CONSTRUCTION MANAGER?

The answer to this question depends on the amount of money in your budget and the availability, knowledge, and skills of your staff. This section will help you to evaluate the need for a Construction Manager on your project.

A. Pros and Cons of Hiring a Construction Manager

Advantages

- Because they are specialists, Construction Managers usually have more experience and expertise than your staff. As a result, they may be able to expedite the design and construction of your project by doing evaluations more quickly and thoroughly. The sooner a project is finished, the sooner you realize the benefits.
- Using a Construction Manager can free up your staff to handle other responsibilities.

Disadvantages

- The cost of a Construction Manager is typically five to ten percent of the project's construction budget. For large projects, this can be a lot of money.
- Hiring a Construction Manager will not totally free up your staff, since they still need to prepare the competitive bid documents, review proposals and prepare administrative contracts. Once the Construction Manager is hired, your staff must manage him and be available to

answer questions, verify invoices and resolve conflicts.

- Your facility staff will not have detailed knowledge of design and construction changes, the reasons for the changes and the resulting documentation.

B. Does Your Project Need a Construction Manager?

At the end of this section is a worksheet to help you answer this question. These are the points you need to consider:

1. Is your schedule tight?

If you need to complete your energy efficiency measures by a certain date, hiring a Construction Manager may be beneficial. Unanticipated problems will invariably occur, and an experienced Manager can keep the project on schedule.

2. Can your staff implement the projects themselves?

That depends on the availability, knowledge and previous experience of your staff. It is common to assume that people can always take on "a little more work." Implementing energy efficiency measures, however, often involves significant time and effort. If your staff is managing an energy project, they may not have time for their normal duties. Conversely, if the staff is tied up with routine day-to-day tasks, the energy project may never be completed or may not be installed properly. That is why the commitment of your staff's time should not be understated.

Some Construction Manager firms willingly train your people to serve as project managers. If you have staff available with some administrative and technical experience, training them can have advantages such as lower project costs. It will also give you in-house Construction Managers for future projects.

3. How experienced and trained is your staff?

If members of your staff are to serve as your project's Construction Manager, they should be fully trained and experienced. Determine if they have the following:

- **Previous Construction Manager Experience**

Keep in mind that practical on-the-job experience is preferable to formalized training.

- **Contract Administration Skills**

Construction Managers oversee documents such as contract forms, amendment forms, change orders, insurance documents, energy compliance forms and lien releases. They also should have knowledge of insurance, liability, bonding, and liens.

- **Environmental, Health, and Safety Experience**

Installation of some energy efficiency measures requires the prior approval by certain State and/or local regulatory agencies. These agencies are responsible for ensuring that equipment

is installed, operated and maintained in a manner that is not detrimental to the environment or affect the public's health and safety. Construction Managers must be experienced and familiar with the requirements associated with specific sectors such as hospitals and schools, or specific projects such as energy generation.

- **Construction Inspection and Commissioning Experience**

Once energy efficiency measures are installed, they must be inspected, commissioned and monitored by specially trained personnel. These tasks take considerable time and experience in establishing and conducting appropriate performance tests. Thus, you should take these factors into account before considering your staff for these tasks. Typically, outside inspectors and commissioning agents are used.

4. Do you have all the information you need to undertake this project?

In some cases, the energy audit may not contain sufficient detail to design or prepare bid specifications for your energy efficiency measures. Consider these questions:

- **Do You Need an Engineer?**

One may be required to develop construction drawings and specifications. The processes of hiring one, monitoring their progress and reviewing their work is an important

task that your organization may want to hire out.

- **Do You Need to Collect Additional Information?**

You may need to do additional research or make measurements before and after you install your energy efficiency measures. For example, you might need to measure light levels before and after you change lamps to ensure that the levels are still within those recommended by the Illuminating Engineering Society. A Construction Manager can oversee this data collection. Appendix A contains information on technical guides that may help in your data collection.

For new construction projects, you may need assistance in having a computer simulation model developed on your proposed buildings. These models will estimate building energy use based on your proposed equipment and operating schedule. A Construction Manager can help evaluate the modeling results to ensure that the projected building energy use will meet your specified requirements.

- **Does the Project's Scope Need to be Developed?**

When the scope of your project varies significantly from that outlined in the energy audit or when you need to choose between several possible approaches, it may be worthwhile to hire someone to help evaluate the new projects.

- **Does Your Construction Schedule Require Precise Timing?**

If so, someone must establish the critical time line needed to meet your schedule. Your organization may want to delegate this task to an experienced Construction Manager.

- **Do You Need to Develop Testing Requirements?**

Standards must be established for assessing when a project is completed and if the installed equipment is working properly. Assuring that these standards are met may warrant the use of a Construction Manager.

5. **Will this project disrupt or compromise your facility's operation?**

Before you install your energy improvements, consider ways to minimize the disruption of your day-to-day operations:

- **Is it Feasible and Economical to Complete the Project During Nonoperating Hours?**

In order to minimize interruptions, you may want to make improvements during typical nonworking hours. Careful coordination is required, however, to accomplish this smoothly. You should, however, evaluate the economic impact of doing work during nonoperating hours to determine if it will result in higher construction costs.

- **Will Work Require the Shutdown of Essential Operations?**

This question is especially important where critical operations such as hospital life support systems, computer centers, police and fire departments, or laboratories are involved. Keeping such systems in operation requires careful management and coordination.

- **What Indirect Disruptions Will Result?**

The shutdown of a building's heating, ventilating and air conditioning (HVAC) equipment or electrical systems are examples of direct disruptions that clearly could impact facility operations. You also need to consider other, indirect disruptions such as noise, dust or impeded traffic flow.

- **What Are the Impacts of Unscheduled Disruptions?**

In many cases, unscheduled disruptions of a system like electric power would be inconvenient but not serious. At hospitals, computer centers, research laboratories, jails and other facilities, however, such a disruption could be disastrous. The consequences of unscheduled disruptions should be considered early on.

6. Is this a complex project with regulatory complications?

If you are simply replacing fluorescent lamps and ballasts with energy efficient ones in a few buildings, you may not need

a Construction Manager. Instead, a staff with previous project management experience could hire an engineering firm to prepare the performance specifications, issue the bid to select the contractor, oversee the installation and do the final inspection and commissioning.

On the other hand, you may want to hire a Construction Manager to oversee a more complicated project that involves numerous permits, complex installation procedures or involves several sites. Extensive modifications of the HVAC systems, for example, or installation of an energy management system for building complexes covering 200,000 square feet are the sort of projects that can benefit from the services of a Construction Manager. Another example may be energy efficiency retrofits encompassing an entire school district and affecting multiple schools.

7. Is there enough money to hire a Construction Manager?

Hiring a Construction Manager typically costs five to ten percent of a project's construction budget. If you determine that your project needs a Construction Manager, the price of those services should be included as part of the project cost identified in your engineering feasibility study or energy audit.

WORKSHEET

Do You Need a Professional Construction Management Firm?

Instructions:

Step 1: Review the Criteria and Key Questions indicated in Worksheet A and add, delete or modify the criteria and questions based on the specific needs of your organization. Assign weighting factors (column A) based on how important that element is to your organization. Some criteria may be more important than others depending on your circumstance. For instance, you may want to consider having weighting criteria ranging from zero to five, with zero being an unimportant criteria and five being a very important criteria to your organization.

Step 2: Assign points based on how strongly the key questions are true (column B). You can use a scale of one to ten. With ten being strongly in agreement and zero being not of concern or not in agreement.

Step 3: Multiply columns A and B to get the total points for that criteria.

Step 4: Total the points for all criteria by summing the “A x B” column and putting the total in Space C.

Step 5: Determine the maximum number of possible points if you were in total agreement with all the key questions. Multiply each of the weighting factors in column A by 10 and then summing them to determine the total available scoring points. Put this total in Space D.

Step 6: Compare your total points with the maximum points available by dividing the number in Space C by Space D and multiplying by 100. Put the result in Space E. The following is one method of analyzing the points:

- If your points are greater than 75 percent of the total points then there is strong recommendation to hire a Construction Manager for your project
- If your points are between 50 and 75 percent of the total points then you may want to consider a Construction Manager.
- If your points are less than 50 percent of the total points then there is not a strong need to hire a Construction Manager.

Worksheet B is an example of a completed worksheet.

Step 7: Note that there may be other issues unique to your organization, not addressed by this worksheet, that should be considered as part of the final decision to hire a Construction Manager.

WORKSHEET A
Do You Need a Professional Construction Management Firm?

<i>Criteria</i>	<i>Key Questions</i>	<i>A Weight</i>	<i>B Points (0-10)</i>	<i>(A x B) Point Total</i>
1. Tight schedule	<ul style="list-style-type: none"> Does my project have a tight schedule? 			
2. Staff unavailable	<ul style="list-style-type: none"> Is my staff unavailable and committed to other projects? 			
3. Lack of trained and experienced staff	<ul style="list-style-type: none"> Does my organization lack trained and experienced staff with construction management, contract administration and inspection experience? 			
4. Lack of project definition	<ul style="list-style-type: none"> Does my project need to be better defined before we start? For example, do we need to develop construction drawings or specifications, collect project data, take measurements or develop an overall project approach? 			
5. Need for careful project coordination	<ul style="list-style-type: none"> Will this project require careful coordination and management to minimize disruption of my facility? For example, will we need to shutdown essential systems such as electrical supplies, HVAC or computer centers? 			
6. Need for careful project management	<ul style="list-style-type: none"> Will this project require careful management to minimize indirect disruptions, such as noise, dust or impeded traffic flow? 			
7. Complicated/multi-facility project	<ul style="list-style-type: none"> Is this a complex energy project that requires resolution of regulatory issues before we begin? 			
8. Available funds	<ul style="list-style-type: none"> Does my organization have funds to hire a CM? 			
TOTAL NUMBERS IN EACH COLUMN				C
TOTAL MAXIMUM POINTS				D
PERCENT OF TOTAL POINTS				E

WORKSHEET B (completed sample)
Do You Need a Professional Construction Management Firm?

Criteria	Key Questions	A Weight	B Points (0-10)	(A x B) Point Total
1. <i>Tight schedule</i>	• <i>Does my project have a tight schedule?</i>	1	4	4
2. <i>Staff unavailable</i>	• <i>Is my staff unavailable and committed to other projects?</i>	2	7	14
3. <i>Lack of trained and experienced staff</i>	• <i>Does my organization lack trained and experienced staff with construction management, contract administration and inspection experience?</i>	3	7	21
4. <i>Lack of project definition</i>	• <i>Does my project need to be better defined before we start? For example, do we need to develop construction drawings or specifications, collect project data, take measurements or develop an overall project approach?</i>	1	5	5
5. <i>Need for careful project coordination</i>	• <i>Will this project require careful coordination and management to minimize disruption of my facility? For example, will we need to shutdown essential systems such as electrical supplies, HVAC or computer centers?</i>	1	5	5
6. <i>Need for careful project management</i>	• <i>Will this project require careful management to minimize indirect disruptions, such as noise, dust or impeded traffic flow?</i>	1	5	5
7. <i>Complicated/multi-facility project</i>	• <i>Is this a complex energy project that requires resolution of regulatory issues before we begin?</i>	1	7	7
8. <i>Available funds</i>	• <i>Does my organization have funds to hire a CM?</i>	2	0	0
TOTAL NUMBERS IN EACH COLUMN			Step 4	C 61
TOTAL MAXIMUM POINTS			Step 5	D 120
PERCENT OF TOTAL POINTS			Step 6	E 51%

III. HOW DO YOU DETERMINE THE SERVICES YOU NEED?

If you decide to hire a Construction Manager, you must determine which services you want them to provide. This section lists available services and helps you decide which are appropriate for your project. They are organized in three phases — pre-construction, construction, and post construction.

At the end of this section, a worksheet will assist you in determining the scope of services your project requires.

For information on bid documents to hire a CM, refer to Section V. In addition, Appendix A contains a reference list that explains how to obtain copies of standard construction management contracts, such as those published by the American Institute of Architects (AIA).

A. Pre-Construction Phase

Several tasks must be accomplished before construction begins.

1. Identify the Most Economical and Most Reliable Way to Accomplish Each Project.

Different approaches may be needed to complete each part of your energy project as inexpensively and reliably as possible. Consider these options for each energy efficiency measure:

- **Use Your In-house Staff**

Depending on their skills and availability, using your employees for construction, inspection or start-up planning may offer the most reliable approach for the least cost.

- **Use the Contractor**

If you use a construction contractor, consider their role for each energy efficiency measure. Rather than having them do construction only, you might consider a *turn-key* approach in which the contractor is responsible for construction, testing and start-up.

- **Use Owner-Supplied Equipment**

It may be less expensive for you to buy equipment directly instead of relying on the installing contractor. This is especially true if your project involves tight scheduling, specialized equipment or air quality permits. Keep in mind, however, that your Construction Manager must be kept informed to smoothly schedule the installation of owner-supplied equipment.

2. Decide If You Need Engineers Or Additional Consultants.

Many energy projects require detailed construction documents and specialized tests, both before and after installation. Identify those requirements early on, so you can hire the specialists you need to accomplish your project without delays.

3. Create a Project Installation Plan.

If your energy project is complicated enough to include different improvements such as lighting and HVAC systems, you should develop a plan that considers the following:

- **Specific Quantities and Locations**

For projects like the replacement of light fixtures, you must specify the number of fixtures to be changed and their exact locations. When locations and quantities are already specified in the energy audit, a Construction Manager may only need to confirm the information. If the audit does not contain this data, however, the Construction Manager may need to conduct an on-site inspection to collect it.

- **Access and Scheduling Constraints**

Many energy efficiency measures involve modifications to existing operating systems. Determine what access or scheduling limitations working with these systems pose before beginning your project.

- **Hazardous or Dangerous Conditions**

Early on, identify special conditions such as dangerously tight spaces, the presence of asbestos insulation or transformers that contain polychlorinated biphenyls (PCBs). If you suspect the presence of hazardous materials, you should investigate your

site and, if necessary, include a remediation plan as part of the project.

- **Verification and Commissioning Processes**

Each part of an energy project will have specific criteria by which its performance is assessed. Before final acceptance is granted, it will be necessary to verify that each energy efficiency measure has been properly installed and is operating according to the design specifications.

For complex or large projects, hiring a Commissioning agent may be worthwhile. A commissioning agent is responsible for establishing the performance test to ensure that the installed energy efficiency equipment is functioning according to the established design specifications. Information on available commissioning resources is contained in Appendix A.

4. Prepare Project Documents.

Before construction begins, either your staff or a Construction Manager must deal with these documents:

- **Pre-bid Documents and Contracts**

Choosing an engineering consultant or a general construction contractor may require competitive bids. The bidding process involves preparing formal Request for Proposals/Request for Qualifications documents referred to as

RFP and RFQs. To prepare the RFP/RFQ, selection criteria must first be developed. Once proposals are received by your organization, they must be evaluated. Finally, costs and contracts must be negotiated with the winning contractor.

- **Construction Documents**

Technical specifications and construction plans must be prepared. Bid packages and other documents also need to be created. Construction documents should also contain performance specifications and commissioning plans.

- **Permits and Inspections**

Some projects require permits and inspections by local building departments or other regulatory agencies. An experienced Construction Manager who has dealt with regulations can expedite the process; a construction contractor can also hire a subcontractor to meet these needs.

- **Budgets and Schedules**

Complex projects with many activities will involve several budgets and schedules. Since the budget includes labor and equipment, both need to be accurately estimated.

- **Project Team Meetings**

The more complicated an energy project, the more important it is to communicate with everyone involved.

Weekly project meetings are typical, although more involved projects may require more frequent meetings.

5. **Provide Health and Safety Orientation.**

Before the start of construction, the Construction Manager will explain health and safety issues to the construction personnel.

6. **Ensure That All Contractors Meet the Minimum Insurance/Bonding Requirements.**

Many public agencies require that contractors carry a minimum amount of liability insurance and can obtain a performance bond of a certain amount. The Construction Manager will ensure that all contractors provide your organization with the required insurance/bonding documents.

B. Construction Phase

Once construction begins, typical Construction Manager services include:

1. **Construction Site Management**

Depending on the level of activity, you will need a manager on site at least part-time, and possibly full-time, during construction. The following guidelines will help you decide the degree of management you need.

- **Cost**

If construction management costs exceed 10 percent of the project budget,

you should consider a full-time, on-site project manager.

- **Schedule**

Work going on at several locations simultaneously should be monitored by a full time, on-site Construction Manager. If construction is intermittent, however, having a part-time site manager may suffice.

- **Several Contractor**

If more than two contractors or subcontractors are working at one time, especially if the work is at several locations, a full-time on-site construction manager should be considered.

- **Special Requirements or Conditions**

Asbestos removal, work in trenches or confined spaces, or modifications to critical or essential systems typifies unusual conditions that benefit from having a full-time site manager.

2. Construction Inspection

Energy projects should be monitored to ensure that the work complies with the construction documents.

- **Inspection Management**

Construction Managers generally take full responsibility for the inspection process. Exceptions: 1) if your facility has qualified construction inspectors; 2)

if inspection by a third party is specified in the contract with the engineer or architect; or 3) if a public agency is available to do the inspection.

- **Inspection Personnel**

If you have qualified in-house staff, they may be able to do inspections. Otherwise, the Construction Manager can use his staff or hire subcontractors. If subcontractors are used, the Manager should provide you with verification of the subcontractor's qualifications and past performance.

3. Construction Support Services

Typical support services during construction include:

- **Submittal Review**

Contractors are normally required to submit data on construction equipment and materials they are using. Unless your staff prepared construction documents, the Construction Manager is usually responsible for reviewing this information. He will generally coordinate this task with the project designer/engineer.

- **Manufacturing Inspection**

Special equipment or materials — things that are owner-supplied, unique, or proprietary — may occasionally require factory inspection. Unless your facility has qualified staff, this should be the Construction Manager's responsibility.

- **Change Orders**

Your organization should have final approval on change orders, especially those involving major modifications in the project's scope or budget. Construction Managers are responsible for reviewing, processing and submitting all contractor invoices to you for final approval.

- **Schedule and Budget Updates**

As construction progresses, either your staff or a Construction Manager needs to update schedules and budgets.

- **Project Meetings**

The construction team should hold weekly meetings to discuss the status of the project, just as they did before construction began.

- **Progress Reports**

The Construction Manager should prepare periodic reports discussing the project status, budget and schedule. Any problems should be discussed including the method of resolution.

4. Commissioning, Final Testing, and Acceptance

The project engineer working with a commissioning agent often develops the criteria and performance tests used to determine when your energy improvements are correctly installed and

your design standards met. If this information is not included in the construction contracts, developing criteria and coordinating testing becomes the responsibility of either the Construction Manager or your facility. If your organization has established procedures that are applicable to all construction projects, the CM can ensure that your newly installed energy efficiency measures meet these requirements.

C. Post-Construction Phase

Once construction is complete, these issues will need to be addressed:

1. Operation and Maintenance Training

If the project involves installation or modification of equipment unfamiliar to your staff, the Construction Manager should ensure that facility staff are trained. This includes ensuring that the equipment manufacturer or supplier provides training and Operation and Maintenance (O&M) manuals for the installed equipment. Delivery of manuals and training should be required by the contract your organization has with the equipment manufacturer or supplier.

If equipment was pre-purchased by your organization, preparation of the O&M manual and needed training may be contracted to one of the project's construction team members. This responsibility, too, must be established in the appropriate team member's contract.

2. As-built Drawings

If your project involves modifications to existing systems or the installation of new equipment, the contractor should provide *as-built drawings*. The Construction Manager should require the contractor provide you with at least three sets — archival, working and plant drawings.

3. Contract Closeout

Before contracts are closed out, make sure the construction site is properly cleaned and restored and that construction equipment is removed. All change orders should be finally resolved, along with the payment of any remaining contractor invoices. Coordination of these matters could be a Construction Manager's responsibility.

WORKSHEET

Which Construction Manager Services Do You Need?

Instructions:

The following checklist will help you determine the Construction Manager services needed for your project. Check the services that are and are not needed and indicate who will provide the services. The list also will help you prepare bid documents to select a Construction Manager, as explained in Section V.

WORKSHEET

Which Construction Manager Services Do You Need?

REQUIREMENTS	Service is Needed	Service is Not Needed	Who will provide the service?
A. Pre-Construction Phase			
1. Identify the most economic and reliable way to accomplish each project			
2. Do you need engineers or other consultants			
3. Create a project installation plan			
4. Prepare project documents			
• Prepare bid documents for contractor			
• Evaluate and select winning contractor			
• Coordinate contract negotiation and preparation			
• Manage the preparation of construction documents			
• Oversee permitting and other regulatory activities			
• Develop and monitor budgets and schedules			
• Conduct project meetings			
• Provide health and safety orientation			
• Ensure that all contractors meet the minimum insurance/ bonding requirements			
B. Construction Phase			
1a Do you need a full-time on-site construction manager, or			
1b Do you need a part-time on-site construction manager			
2 Perform construction inspections			
• Inspect mechanical systems and components			
• Inspect electrical systems and components			
• Inspect instrumentation and controls			

REQUIREMENTS	Service is Needed	Service is Not Needed	Who will provide the service?
3. Provide construction support			
• Review data on construction equipment and materials			
• Provide factory inspection of special equipment			
• Review change orders			
• Update construction schedules and budgets			
• Conduct team meetings			
• Prepare progress reports			
4. Develop criteria for commissioning, final testing and acceptance			
C. Post Construction Phase			
1. Prepare operation and maintenance manuals			
2. Provide training			
3. Require the preparation of <i>as-built</i> equipment list or drawings			
4. Close out construction contracts			

IV. HOW DO YOU ESTIMATE CONSTRUCTION MANAGEMENT COSTS?

Construction management services generally cost between five and ten percent of a project's budget. Final costs may vary, however, according to the size, complexity and schedule of the project and prevailing marketing conditions in the local area.

A. What Factors Can Affect the Cost?

Estimated Construction Manager costs vary when:

- The project's scope is limited and involves expensive equipment.
- The project is remote, away from your headquarters or your satellite offices.
- The project involves work in many locations at one time.
- The project requires close coordination with the everyday functions of your facility.
- The project has flexible scheduling requirements.
- Your facility has qualified staff who is available to assist the Construction Manager.
- The project has complex regulatory permitting requirements.

B. How Do I Estimate the Cost?

Construction Manager services typically range between five and ten percent of a project's estimated cost of construction. Compare this estimate to the actual bids received from the prospective Construction Management Firms. Section VI contains information for determining the reasonableness of construction management costs.

Because of the laws of supply and demand, the actual cost may be higher than your estimates if the demand for Construction Managers is high. On the other hand, if the market for Construction Managers is weak, firms will compete more aggressively for available work. As a result, actual costs may be lower than your estimates.

There are two components to a Construction Manager's price. The first is the level of effort, generally expressed in terms of labor hours. The second is the labor cost, generally expressed in dollars per hour.

- **Level of Effort**

This represents the number of labor hours required to complete a task. The task may be a specific one accomplished in a relatively short time, such as evaluating contractor proposals. It can also be an ongoing effort, such as providing full-time site management.

Each project has its own specific level of effort, based on the number of services required. Reference documents such, as *Means Building Construction Cost Data*

Manual can provide estimates of the time needed to complete various tasks. Additional cost estimating guides and resources are listed in Appendix A.

- **Labor Cost**

Labor cost varies according to the type of skills required and the location of the project itself. Labor costs and regional adjustment factors also can be obtained from estimating guides like *Means Building Construction Cost Data Manual*.

Categories for Construction manager labor include:

- Project/Construction Managers
- Senior/Specialty Inspectors
- Office Engineers
- General Inspectors
- Administrative Support Staff

V. HOW DO YOU PREPARE THE DOCUMENTS TO HIRE A CONSTRUCTION MANAGER?

Previous sections mentioned the need to prepare bid documents called Request for Proposals (known as RFPs) and Request for Qualifications (known as RFQs). This section explains these documents; there is a sample RFP/RFQ in Appendix B.

A. Defining RFP and RFQ

The terms “RFP” and “RFQ” vary from one organization to another. The main difference is the role that price places in the selection process. Here are definitions used in the construction industry:

- **RFP**

This document defines the services being sought and, typically, the maximum price an organization is willing to pay for those services. The proposal requires companies offering bids to supply information on past experience and references. The winning bidder is the company most technically qualified who can do the work for the lowest price.

- **RFQ**

This document also defines the services being sought. Selection of the winning bid is based on technical qualifications and the price is negotiated with the chosen firm. If a price is required as part of the RFQ, the bidder typically provides it in a separate, sealed envelope. This price is not considered until after the technical selection has been made.

An option that combines an RFP and an RFQ is to issue an RFQ, develop a *shortlist* of qualifying firms that meet the basic requirements, and then issue an RFP only to these firms.

Your facility may have certain legal restrictions associated with selecting professional services based on price. Your legal counsel and contract administrators should be consulted as part of the decision to use an RFP or an RFQ.

B. Identifying Potential Construction Managers

Ensuring that potential CM candidates are included in your bid list is important. Failure to include the best-qualified firms as potential candidates could affect the success of your project.

Typical methods for identifying candidate CM firms include:

- Advertising in newspapers or trade magazines, such as the *Daily Pacific Builder* or *Engineering News-Record*.
- Checking lists of interested companies on file with your organization.
- Asking for references from other organizations that may have used similar services.

C. Preparing the RFP/RFQ.

There is a sample RFP/RFQ in Appendix B that can be modified to meet the needs of your specific project. Instructions that follow will help you determine which sections should be

added, removed or modified based on information you have developed so far in this document.

The following lists the minimum sections to be contained in an RFP/RFQ. A description of the information in each of these sections follows the list.

- *Summary*
- *Introduction*
- *Description of project*
- *Scope of Work*
- *Proposal format*
- *Contract terms and conditions (with specific project exceptions noted)*
- *Selection process*
- *Closing*

1. Summary

Provide a one-page summary that can be sent to all companies on your mailing list to assess interest in receiving the detailed RFP/RFQ. The summary should provide general information about the RFP/RFQ and include:

- **Purpose**

Indicate the goals and objectives of the RFP/RFQ.

- **Budget**

In an RFP, specify the amount of money you have to work with, setting a maximum upper limit. The funds available do not need to be indicated in the RFQ, since the project's cost will be the subject of negotiations with the highest technical scoring bidder.

- **Due Date**

Indicate the exact date and time you need proposals returned, along with a specific mailing or delivery address. Specify whether the time given refers to the post-marked date or the time the proposal is physically received in your office.

- **Schedule for Selection**

Explain your timetable for the selection of a Construction Manager. This should include dates for the following:

- ✓ RFP/RFQ issuance
- ✓ Pre-bid meeting (or the site walk-through, if applicable)
- ✓ Proposal submittal deadline
- ✓ Notification of short list firms (if applicable)
- ✓ Selection of winning CM bid
- ✓ Project start
- ✓ Project complete

- **Contact Person**

Indicate who in your organization will be responsible for responding to questions on the RFP/RFQ.

2. Introduction

This brief section should:

- **Discuss the Services Requested**

Explain that you are requesting Construction Management services and identify the specific ones desired, as detailed in Section III.

- **Indicate the Location of Your Organization and/or Project**

Make it clearly understood if the project site is different from your organization's location. Also, specify if the project site is available for inspection prior to submittal of the proposals.

- **Summarize the RFP/RFQ**

Define the project's purpose, discuss the approach to be taken, describe the schedule and, if the document is an RFP, the budget.

- **Outline the Selection Method**

Explain whether the selection of a contractor will be based on technical qualifications alone (RFQ) or whether it will also consider the lowest bid (RFP). Discuss if the cost of services will be handled through negotiations or a separate cost proposal. Also, indicate if *shortlisting* will be used to eliminate lower-ranked proposals or if an interview will be part of the selection process.

- **Specify Any Restrictive Conditions**

Identify any small business, minority, women or disabled veteran business

enterprise requirements that are imposed by your organization.

3. Description of Project

To clarify the services required from the Construction Manager, the following descriptions are usually included:

- **Overall Project Description**

In broad terms, describe the project and explain if the work to be done is a new installation, equipment replacement or retrofit.

- **Energy Efficiency Measures to be Implemented**

Describe each measure in a brief, single sentence, such as:

- ✓ Remove existing fluorescent lamps and ballasts and replace with T-8 lamps and electronic ballasts.
- ✓ Install a direct digital energy management system to control the operation of existing HVAC equipment.

If an energy audit was completed that describes the projects to be implemented, it should be included as part of your RFP/RFQ. This can either be an attachment to your bid document or made available upon request.

- **Schedule**

Discuss the timeline you plan to utilize, including start and finish dates for each

project phase. This should include any known scheduling constraints such as:

- ✓ Work that must be completed at night or on weekends.
- ✓ Work in a certain area that must be completed by a specific date.
- ✓ Work in a certain area that cannot be started before a specific date.

- **Project organization**

Carefully explain the roles, responsibilities and relationships between your staff, the Construction Manager, the engineering consultant (if one is required) and any contractors. Designate the contractor's responsibilities. Decide if engineering and contractor contracts will be with the Construction Manager or with your facility. Think about these questions:

- ✓ What are your staff's responsibilities?
- ✓ Who will decide scheduling changes and budget or legal issues?
- ✓ What will be the contractual arrangements?

- **Site Plan**

Include a plan if the work takes place in several buildings at the project site.

- **Special Work Requirements**

Identify special work requirements such as the presence of asbestos, polychlorinated biphenyls (PCBs) or other hazardous substances, and dangerous conditions such as confined work spaces. Spell out the exact locations of these problems. It is important to note special requirements since they could have major impacts on costs and the responsibilities undertaken by the Construction Manager.

4. **Scope of Work**

The scope of work or work statement is a description of the services to be provided by the Construction Manager (see Sample RFP/RFP in Appendix B). It should include the following:

- **List of Services You Require**

Completing the worksheet at the end of Section III should give you the information required to compile a list of needed services. If price is a selection criteria — or if a fixed fee contract will be used with the Construction Manager — descriptions of required services must be specific. Note the differences between these two examples:

Specific Descriptions

CM shall conduct one project review meeting each week.

CM shall provide an average of four hours a week of regulatory compliance assistance.

Non-Specific Descriptions

CM shall conduct project review meetings when requested.

CM shall provide regulatory compliance assistance as required.

- **List of required services, broken down by project phase**

This will help you evaluate proposals and to monitor budgets and schedules once construction begins. Examples of typical project phases include:

Development Phase

Decide whether you want a Construction Manager to help you develop a project installation plan. If so, the CM can determine the need for consultants and contractors, develop budgets or schedules, identify any permit requirements and help to set the responsibilities of your staff.

Design Phase

Indicate if construction drawings and specifications by an engineering consultant are needed. Construction Managers will define the process for selecting consultants, clarify everyone's responsibilities and fine-tune the budget and schedule.

Bid and Award Phase

If you are selecting a construction contractor by competitive bid, the CM will prepare bid documents, arrange pre-bid meetings and site-walks through, evaluate bids and develop the construction contract.

Construction Phase

During construction, CMs usually monitor budgets and schedules to keep the project on track. They also process change orders, assist with permits and arrange for required inspections.

Project Completion Phase

Either the Construction Manager or his subcontractors will be responsible for final testing, start-up and acceptance of the project, resolution of change orders and contract disputes and preparation of as-built drawings and operation and maintenance manuals.

5. Proposal Format

Clearly spell out the issues you want prospective bidders to address. Being precise up front ensures that their proposals will address the issues that are important to you.

Having all bidders respond to a consistent set of questions also will help you choose between proposals, since the questions can form the basis for your final selection criteria.

Have each firm answer these questions about your project:

- **Do They Understand It?**

Ask prospective bidders to explain what they see as the scope and objectives of your energy project.

- **What's Their Approach?**

Have them outline how they will handle the issues raised in your RFP/RFQ. Prospective firms can use this section to highlight unique services they offer, or make cost-saving suggestions about materials or equipment.

- **Who Will Do the Work?**

Ask bidders to describe the people they plan to use on the project. Have them include:

- ✓ An organization chart showing team members and their role in the project.
- ✓ Resumes for each team member.
- ✓ A brief description of each member's experience and their proposed role for your project. Identify those with engineering or contractor licenses and give the license numbers.
- ✓ Their projections, by category and task, of the number of hours of labor needed to accomplish the

project.

- ✓ A commitment that key employees will remain on the project for its duration.
- ✓ A breakdown, by percent, of any minority, women and disabled veteran business enterprises they plan to hire.

- **What Are the Firm's Qualifications?**

Have prospective bidders explain their firm's experience on similar projects. They should include:

- ✓ Brief descriptions of the services they provided and the size and scope of the work. Have them list construction costs, dates and the names of participating team members.
- ✓ A biography of the firm, including years in operation, office locations, total number of personnel as well as the number of personnel in the local office.
- ✓ A list of projects the firm currently has underway, including the dollar value and percent of completion.
- ✓ Financial references and a copy of the latest financial report.
- ✓ A description of insurance coverage and limits. If the firm is bonded, they should include the name of the bonding firm.

- ✓ Identification of any real or perceived conflicts of interest. Such a conflict could exist, for example, if a Construction Management firm was affiliated with the supplier of a product you plan to install.

- **Do They Have References?**

When responding to an RFP/RFQ, a firm must include a list of references. These should include contact names, positions, addresses, phone numbers, and a brief description of the work the firm provided them. A minimum of five references from projects similar to yours is recommended. This last point is important; a firm could have performed exceptionally on a freeway construction project but have no experience with energy efficiency project installations.

- **Are There Clarifications?**

The responding firm should identify any additions or deletions they feel are necessary to the scope of work or your organization's standard contract terms. Identifying these clarifications here helps you to evaluate proposals and develop contracts.

- **What Is the Cost?**

Cost is addressed differently in an RFP than in an RFQ.

- ✓ **RFPs**

Cost proposals are provided in a separate, sealed envelope. The

proposal identifies the hourly rates for each member of a Construction Manager's staff who will be working on the contract. It details the number of hours to be spent on each task, the firm's general administrative expense, overhead and estimated direct expenses.

It is important that the individuals and amount of time committed to your project are consistent between the technical and cost proposals. The CM firm that meets the minimum technical score and has the lowest cost proposal is generally awarded the work.

- ✓ **RFQs**

Here, the responding firm with the highest technical rank is asked to submit its cost for the work described. It may be helpful to have the bidder with the highest technical score complete a form listing each of their staff that will be working on the project, the specific task assigned, time commitment and their hourly rates. Again, it is important that there be consistency between the technical and cost proposals.

Once this is done, your organization can negotiate cost with this firm until a mutually acceptable amount is reached. If agreement is not reached, your organization can begin negotiations with the next highest ranking firm.

- **Any Other Considerations?**

It is often helpful to limit the number of pages you will accept in a proposal to encourage succinctness.

Indicate the number of copies of the proposal you need and any unusual delivery instructions. The number of copies is generally determined by the number of people in your organization reviewing it.

6. Contract Terms and Conditions.

Clearly identify any revisions, additions, or deletions to your organization's standard terms and conditions that apply to your project.

Be sure to review your organization's standard contract terms and conditions to ensure that issues specific to this project are addressed. Any required changes should be clearly identified in the RFP/RFQ.

It is essential that each potential CM firm has the opportunity to review the standard or revised contract terms and conditions that apply to the planned project. This helps to avoid conflicts with firms unwilling to comply with the contract. It also puts your organization in a stronger bargaining position, since firms must respond to your terms and conditions rather than proposing their own.

If a proposed Construction Management firm recommends modifications to your standard contract, have your legal staff

review and approve the revisions — the changes will become part of a legally binding contract.

7. Selection Process.

Section VI provides information on evaluating and ranking submissions. Modified, these can become the criteria used to evaluate each proposal. Refer to the sample RFP/RFQ in Appendix B for examples of typical selection criteria.

In your considerations, make sure you include any requirements that bidders must meet to be eligible for selection, such as insurance coverage and contractor licenses.

8. Closing.

While Construction Management firms are preparing responses to your RFP/RFQ, it is important that someone in your organization be available to answer questions. Provide the name, address and telephone number for your contact person. If their availability is limited, provide a backup name and telephone number.

If telephone calls or visits to your staff about RFP/RFQ issues will be prohibited or limited during the preparation period, clearly state these restrictions up front. In light of such limitations, you should arrange a pre-bid meeting or site walk through to allow prospective firms to ask questions.

D. Developing the Scope of Work

After selecting a construction manager, the next step is to develop a contract that contains their scope of work. You can use the information and checklists previously completed in Section III to help you identify the specific tasks and work requirements. These tasks must be tightly written to ensure that the work products are completed to your satisfaction and provides your organization with flexibility to make changes without compromising the project. Appendix C contains recommendations for developing a scope of work for the construction contractor.

VI. HOW DO YOU CHOOSE THE RIGHT CONSTRUCTION MANAGER?

By this point, you should have defined the Construction Management services you need, prepared and distributed an RFP/RFQ that asks all the appropriate questions of eligible CM firms, and have received back their proposals. This section provides guidelines for evaluating their responses and making your choice.

At the end of this section is a worksheet that will assist you in your selection. Save the completed worksheet to document your decisions.

These are the factors on which your choice should be based:

A. How Experienced Is the Firm?

This is the most fundamental selection criteria. Information that will indicate a company's level of experience includes:

- **Number of Similar Projects**

Projects should be of similar scope and contract amount. Check to see if this company has a proven track record with projects like yours.

- **Years of Experience**

This will help indicate if the CM firm is a known, reputable company.

- **Awards for Doing Similar Type Projects**

If awarded for projects similar to yours, accolades can indicate the firm's reputation for quality work.

- **California Contractor's License**

If the prospective Construction Management firm will do any of the construction work, it must have a valid California Contractor's License. Check that the license is current. See if any complaints have been registered with the California State Licensing Board in Sacramento. Verify that the license type is appropriate for the work to be performed. Appendix A contains information on how to contact the California State Licensing Board.

B. Can The Firm Handle Your Project?

Determine whether the company is presently able to take on your projects. Information that indicates the firm's capacity includes:

- **Number of Employees On Staff Who Have Done Similar Work**

There should be an adequate number of experienced staff who can be assigned to your project.

- **Availability of Employees**

The firm should be able to assign the right people to your job. Their

organization should be able to move another competent person to your project if the one assigned leaves or is not performing satisfactorily.

- **Commitment of Employees**

It is important that a Construction Management firm's key staff be committed for the duration of your project. A company's assurances, combined with the number of experienced staff, help to determine their level of commitment.

- **Status of Current Work**

The dollar value and percent complete of a firm's current projects will indicate whether they can accommodate your project without affecting their ability to do a quality job.

- **Financial Capacity**

An annual financial report can indicate if a firm is financially solvent and will be able to complete the project.

- **Bonding Capacity**

The Construction Manager may need to be bonded to meet the performance requirements of your project. Request a statement of bonding capacity and the name of the bonding firm. A higher bonding capacity generally indicates a stronger firm.

- **Insurance Requirements**

A firm must be able to obtain the types and levels of insurance coverage required by your organization.

C. How Capable Is the Firm's Present Staff?

Experience of a Construction Management firm could be very different from the experience of its employees, especially if there has been a high employee turnover or if the company is relatively new. Check on the following:

- **Number of Employees with Similar Experience**

This total indicates the breadth of experience that the company has to draw upon to provide the services you require.

- **Employees with Long-Term Experience**

The number of staff members with 15 years or more of relevant experience can help you gauge the depth of the company's expertise.

- **Number of Professional Registrations or Licenses**

The availability of employees holding Contractor's Licenses or California Professional Engineer Registrations suggests whether a firm can successfully manage subcontractors and engineering firms who may have to

prepare construction documents. Appendix A contains information on how to contact these organizations.

- **Employees Proposed for Your Project**

A prospective firm should supply a list of employee names and the roles they will fill on your project. A sample of such a list can be found in Appendix B.

Resumes for each proposed project staff member should be furnished as well, to indicate the level of staff experience being offered. It is especially important to review carefully the credentials of the proposed on-site project manager.

D. How are the Firm's References?

It is important to obtain an independent assessment of the firm's past performance and not to rely entirely on information provided in the proposal. A reference list should include names, addresses, phone numbers and position titles of each contact person, plus a brief description of the work provided by the firm. A minimum of five references should be supplied from companies that used the CM firm for projects similar to yours. Contact each reference to determine the following:

- **Description and Completion Date of the Reference's Project**

This will help you determine if the experience is relevant. Find out the names of key CM staff who worked on the project.

- **Strengths and Weaknesses of the CM Firm**

Ask about problems occurring during the project. Also inquire about the ways the CM firm may have excelled in its job.

- **Adhering to Schedule**

Determine how successfully the Construction Manager kept to the project schedule.

- **Adhering to Budget**

Ask questions about change order charges and overall costs. This will help to determine the firm's ability to stay within the budget.

- **Achieving Quality**

Inquire about overall performance. Did the CM firm receive a quality product from the contractor and the product pleased the client?

- **Recommendations of the Reference**

A happy former client is the best testament to a Construction Manager's performance.

E. What is the Firm's Approach?

When a firm explains how it will accomplish your project, it shows how well it understands your requirements. Information to look for in a proposed project approach includes:

- **Proposed Staff**

The size and makeup of the project's staff indicates how well the firm understands the scope and schedule of your job.

- **Proposed Schedule**

The timeline given in the firm's proposal demonstrates its understanding of your projects' complexities.

- **Responsiveness to Special Issues**

Make sure a firm's proposal addresses your project's unique access or scheduling constraints, special working conditions or other issues such as the involvement of your staff.

F. Are Costs Reasonable?

If the proposal includes the cost for Construction Management, that figure and the associated labor hours provide another indication of how well the firm understands your project. Information to look for includes:

- **Comparison of Prices**

The initial energy audit should have cost estimates. Compare these figures to the estimate offered by the CM firm. Construction Management services generally average five to ten percent of the project's estimated cost. This

amount could be higher or lower, however, depending on your site conditions and the scope of work to be done.

- **Comparison of Estimated Hours**

Using estimated costs, you can approximate the number of hours of labor your project will take to complete. Contrast your projections with the hours anticipated by a prospective CM firm. You can often obtain the best assessment by comparing one proposal to another.

- **Comparison of Average Hourly Rates**

Divide the total labor cost by the total number of labor hours to obtain an average hourly rate. When you compare this figure to the proposed billing rate for the project manager and other senior staff, you can determine what level of staff will be supplying most of the labor on your job.

G. Does the Firm Meet Your Public Agency Criteria?

Many public sector projects require participation by small businesses and/or minority, women and disabled veteran business enterprises (MBE/WBE/DVBE). In such cases, responding firms must comply with these rules in order to be eligible for consideration.

WORKSHEET

How to Choose the Right Construction Manager

Instructions:

This section contains a sample worksheet to help you select and evaluate proposals from construction management firms. Worksheet A is a blank worksheet and Worksheet B shows a completed worksheet following the instructions given in this section. These worksheets will help you select the construction manager who best meets the needs and requirements of your project. The criteria indicated in the worksheet must be consistent with that listed in your RFP/RFQ. Refer to Appendix B for additional information on the RFP/RFQ, sample evaluation criteria and weighing factors.

Complete one Worksheet A for each bidder. The following are the steps to complete Worksheet A:

Step 1: In Space A, indicate the name of the bidder.

Step 2: In column B, lists the criteria to be used to evaluate each proposal. These criteria must be consistent with those contained in your RFP/RFQ.

Step 3: In column C, indicate the weighing factors for each of the criteria. Weighing factors are an indication of the relative level of importance of each criteria to your organization. Criteria that are very important are given a high weight. Less important criteria given a lower weight. For instance, you can use numbers from 0 (unimportant) to 10 (extremely important). These weighing factors should be the same as those contained in your RFP/RFQ.

Step 4: In column D, rank each firm's proposal against the other proposals for each criteria.

- a. Use numbers 1 through "X," with "X" being the number of firms proposing. For example, if there are five proposals, the highest number would be "5."
- b. The firm with the highest rank for a criteria should be assigned the highest number, the lowest rank firm would be assigned number 1. If two or more firms are equivalent for a criterion, it is acceptable to assign the same ranking to the two firms. The highest score in this case would be "X"-1 (with two firms ranked equal).

Step 5: Calculate the total score for each firm by multiplying the weighing factor in column C with the rank or points in column D.

Step 6: Add total points for each firm. The highest points equals the highest ranking. If you are doing a RFQ, you can shortlist the highest ranking firms and proceed with interviews. After the interviews, the highest rank firm will have the first opportunity to negotiate rates with your organization.

Step 7: Indicate any comments or reasons for the assigned points or rank. This could be helpful when you debrief the unsuccessful bidders.

It should be emphasized that the previous method of evaluation and ranking is only one of several available. Another method is to develop a score by ranking according to defined criteria, without comparing each proposal to another. In this case, points would be awarded on a standard scale, such as:

- **Exceptional (10 points):** The response satisfies the requirements in a superior manner.
- **Above Average (6-9 points):** The response satisfies the requirement in an exemplary manner.
- **Average (5 points):** The response satisfies the requirements.
- **Below Average (1-4 points):** The response is minimally acceptable.
- **Fail (0 points):** The response is not in substantial accord with RFP/RFQ requirements.

These assigned points would be placed in column D, next to the appropriate selection criteria. You would then multiply the assigned points by the weighing factor as indicated in Step 5 and determine the total score for each firm.

WORKSHEET A

Proposal Evaluation and Ranking

Bidder: _____
A

<i>Selection Criteria (B)</i>	<i>Weighing Factors (C)</i>	<i>Rank/ Points (D)</i>	<i>Score (C) x (D)</i>	<i>Comments</i>
Total Points				
Maximum Points *				

* The maximum points are determined by multiplying each weighing factor (column C) by the largest number of points possible for that category (column D).

WORKSHEET B
Proposal Evaluation and Ranking (Completed Sample)

Bidder: **XYZ Company** **A**

Step 1 Step 3 Step 4 Step 5

Step 2 Step 7

<i>Selection Criteria (B)</i>	<i>Weighing Factors (C)</i>	<i>Rank/Points (1-10) (D)</i>	<i>Score (C) x (D)</i>	<i>Comments</i>
Understanding project needs -- Proposed project staff -- Proposed schedule -- Responsiveness to project issues	10	8	80	
Identification of innovative approaches and ideas	7	5	35	
Firm experience -- Number of similar type projects -- Years of experience -- Number of awards for doing similar type projects -- California Contractor's Licenses, type and standing -- Other licenses	8	7	56	
Commitment to your project -- Number of employees who have done similar work -- Availability of key CM staff -- Dollar value and status of current projects (e.g., % complete)	8	8	64	
Personnel experience -- Number of employees with similar CM experience -- Number of employees with more than 15 years of similar experience -- Number of employees with California Professional Engineer registration	8	7	56	
Financial status -- Financial capacity -- Bonding capacity -- Insurance coverage	8	7	56	
References	8	7	56	
Quality of proposed project team	7	7	49	
Total Points			452	
Maximum Points *			640	

* The maximum points are determined by multiplying each weighing factor (column C) by the largest number of points possible for that category (column D).

APPENDIX A ADDITIONAL INFORMATION

Information on Construction Managers

Construction Management Association of America
7918 Jones Branch Drive, Suite 540
McLean, VA 22102-3307
Telephone: 703-356-2622
www.cmaanet.org/cmaa_main.htm

This organization has information about construction management and how to identify qualified Construction Manager professionals for current and future projects.

Contract Samples

- The American Institute of Architects (AIA)
1735 New York Avenue, N.W.
Washington, D.C. 20006
Telephone: (202) 626-7300
Fax: (202) 626-7424
www.aiaonline.com

Cost Estimating Guides

- *Means Building Construction Cost Data Manual*
Means Electrical Cost Data Manual
Means Mechanical Cost Data Manual
R.S. Means Company, Inc.
Construction Publishers and Consultants
Construction Plaza, 63 Smiths Lane
Kingston, MA 02364-0800
(800) 334-3509
www.rsmeans.com
- *Dodge Cost Guides, Dodge Unit Cost Guide, Dodge Electrical Cost Guide and Dodge Repair and Remodel Cost Guide.*
Marshall and Swift
911 Wilshire Boulevard, Suite 1600
Los Angeles, CA 90017-3409
1-800- 421-8042
www.marshallswift.com

- *General Prevailing Wage Determinations*
State of California, Department of Industrial Relations
P. O. Box 420603
San Francisco, CA 94142-0603
(415) 703-4780
www.dir.ca.gov/dlsr/statistics_research.html

Technical Information

- *Lighting Handbook, Reference and Application*
Illuminating Engineering Society of
North America, Publications Department
120 Wall Street, 17th Floor
New York, New York, 10005
(212) 248-5500
www.iesna.org/
- *Advanced Lighting Guidelines*
California Energy Commission, Publications
1516 Ninth Street, MS-13
Sacramento, CA 95814
(916) 654-5200
www.newbuildings.org
The 1993 version is currently out of print but it can be downloaded at <www.newbuildings.org>.
The 1993 guidebook is currently being revised and a new version should be available in late 2000.
- *Non-Residential Manual for Compliance with 1998 Energy Efficiency Standards*
(#400-98-005)
California Energy Commission, Publications
1516 9th Street, MS-13
Sacramento, CA 95814
(916) 654-5200
The standards may be obtained through the Publications Office or downloaded at:
<www.energy.ca.gov/title24/index.html>

- *ASHRAE Handbook*
1997 Fundamentals
1996 HVAC Systems and Equipment
1999 HVAC Applications
1998 Refrigeration
 American Society of Heating, Refrigerating and Air Conditioning Engineers
 1791 Tullie Circle, N.E.
 Atlanta, GA 30329
 (404) 636-8400
 www.ashrae.org

Commissioning and Operation and Maintenance Resources

- *Model Commission Plan and Guide Specifications*
 PECI
 921 SW Washington Street, Suite 312
 Portland, Oregon
 (503) 248-4636
 www.peci.org/cx/
 This web site by the Portland Energy Conservation Incorporated contains information on building commissioning, operation and maintenance strategies and links to other organizations that have developed commissioning plans and specifications.

Project Management Handbooks

The Energy Commission has developed a series of handbooks designed to help public agencies and others implement energy efficiency projects. The following handbooks are currently available:

- *How to Hire an Energy Services Company*
- *How to Hire an Energy Auditor to Identify Energy Efficiency Projects*
- *How to Finance Public Sector Energy Efficiency Projects*
- *Energy Accounting: A Key Tool in Managing Energy Costs*
- *Guide to Preparing Feasibility Studies for Energy Efficiency Projects*
- *How to Procure Electricity and Natural Gas in a Competitive Market Environment*
 (available Summer 2000)

These documents can be downloaded through the Energy Commissions Web Site at <www.energy.ca.gov/efficiency/reports/html> or contact the Energy Commission at the following address for a copy:

California Energy Commission
Energy Efficiency Division
Nonresidential Buildings Office
1516 Ninth Street, MS-26
Sacramento, CA 95814
Telephone: 916-654-4008
Fax: 916-654-4304
e-mail: nonres@energy.state.ca.us

Equipment Specifications

- *Building Specifications for Energy Efficient Equipment*
As a contractor in the Energy Commissions Public Interest Energy Research Program, Eley Associates is developing equipment specifications for energy efficient equipment. A draft version of the specifications will be available in late 2000. Information on the specifications will be posted on the Eley Associates Web Site.
www.eley.com
- *Master Specifications*
Veterans Administration
www.va.gov/facmgt/standard/spec_idx.htm
This site contains over 300 master specifications for construction projects such as medical, office and utility buildings.
- The Construction Specifications Institute (CSI)
99 Canal Center Plaza, Suite 300
Alexandria, VA 22314
(800) 689-2900, (703) 684-0300
www.csinet.org
- Federal Energy Management System
Master Specification for lighting
www.erendoe.gov/fem/resources/masterspec.html

Licensing Boards

- California Board for Professional Engineers and Land Surveyors
Mailing Address: Post Office Box 349002, Sacramento CA 95834-9002
Street Address: 2535 Capitol Oaks Drive, Suite 300, Sacramento CA 95833-2944
Telephone: (916) 263-2222
www.dca.ca.gov/pels
- California Contractors State License Board
Mailing Address: Post Office Box 26000, Sacramento, CA 95826
Street Address: 9821 Business Park Drive, Sacramento, CA
Information Technicians: (916) 255-3900
24 Hour Licensing & Consumer Information: 1-800-321-CSLB (2752)
www.cslb.ca.gov

APPENDIX B

SAMPLE REQUEST FOR PROPOSALS (RFP)/ REQUEST FOR QUALIFICATIONS (RFQ) FOR CONSTRUCTION MANAGEMENT SERVICES

This appendix contains a sample RFP/RFQ for procuring construction management services. Though we have attempted to produce an RFP/RFQ that would be broadly applicable to most situations, you should still tailor this document to meet your specific needs.

SUMMARY

City of _____ Construction Management Services for Energy Efficiency Projects

Purpose

The purpose of this Request for Proposal (RFP) is to select a contractor to provide construction management services. The City of _____ has completed an energy audit of its buildings. The audit identified many cost-effective energy efficiency projects for the Administration Building and Annex. The City is interested in hiring a construction manager to expedite the installation of these projects. The projects include installation of energy efficient fluorescent lamps and ballasts, chiller, variable speed drive pumps, and an energy management system. The total project cost is estimated at \$1.5 million. The projects are to be installed in the Administration Building and Annex, which total 700,000 square feet. The projects must be installed by _____ in order to take advantage of utility incentives.

Budgeted Funds

There is a total maximum of \$_____ available. This is an hourly rate plus cost reimbursement contract with a ceiling on the total contract amount.

Proposal Due Date

Deliver _____ typed copies to the City of _____, Contracts Office, _____, no later than _____, at _____ p.m.

Tentative Schedule

_____	RFP Released
_____	Pre-bid Meeting or Site Walk-Through
_____	Proposals due no later than _____ p.m.
_____	Notification of shortlist firms
_____	Interviews
_____	Contractor Selected
_____	Contract Start Date
_____	Project Completion Date

Request for Proposals

To get a complete copy of the Request for Proposal, please contact _____.

INTRODUCTION

City of _____ Construction Management Services for Energy Efficiency Projects

Purpose

The purpose of this Request for Proposal (RFP) is to select a contractor to provide construction management services to expedite the installation of several energy efficiency projects in the City Administration Building and Annex, which are located at _____. A site walk of these facilities is scheduled for _____.

Requested Services

The specific construction management services desired are _____ (refer to Section III).

RFP Summary

State the purpose, objective, approach, expected result, schedule and budget.

Selection Process

State how each proposal will be evaluated and the minimum technical score required for passing. Indicate whether a shortlist of candidates will be developed from the highest ranked proposals and whether interviews will be part of the selection process. Discuss how cost of services will be evaluated in the selection process.

Restrictive Conditions

State any small business, minority, women and/or disabled veteran business enterprise requirements.

DESCRIPTION OF THE PROJECT

The selected construction manager will expedite the implementation of the following energy efficiency measures (EEMs) at _____ :
(specify project location)

1. Replace existing incandescent exit signs with ones using light emitting diodes (LED).
2. Retrofit existing ceiling mounted and recessed fluorescent fixtures with ones using T-8 fluorescent lamps and electronic ballasts.
3. Install occupancy sensors in selected rooms.
4. Install high efficiency chiller.
5. Install variable speed drive pumps.
6. Install an energy management system.

The projects are described more fully in Attachment A-Energy Audit (not in this sample RFP).

Project Schedule

	Start	Finish
Project Design	_____ 2000	_____ 2000
Bid and Award	_____ 2000	_____ 2000
Construct (___ months)	_____ 2000	_____ 2002

We plan to bid the design and construction as one contract (design-build). Proposers can suggest other bid options, indicate their advantages and disadvantages and submit it in the Approach to Project Section. The selected CM will assist in deciding on the best installation path.

Project Organization

(note: client = legal name of your organization)

The Client wishes to form a management team consisting of the Client staff, the Construction Manager and during construction, the Contractor. The Construction Manager will assume the lead in program and design matters, and during construction, in cost and schedule matters. The Client will provide management direction and will make all financial and legal decisions.

Site Plan

A site plan identifying the buildings to be retrofitted is contained in Attachment _____.

Special Work Requirements

There are no known asbestos or polychlorinated biphenyls (PCBs) in the identified buildings.

SCOPE OF WORK

The Construction Manager will provide the following services:

1. Project Management Assistance

- A. Plan and track project budgets and actual costs
- B. Maintain project schedules
- C. Prepare and maintain cash flow projections
- D. Research and prepare reports on special issues
- E. Attend and assist Client in project meetings
- F. Provide other support and assistance to Client staff on request
- G. Assist Client in communication and coordination with local, state and federal agencies involved in the project, such as _____

2. Project Development Phase

- A. Develop project approach, budget and schedule
- B. Determine the need for contractors and regulatory permits required
- C. Identify implementation concerns and recommend solutions

3. Design Phase

- A. Prepare a management plan that will address contracting strategy, schedule, bid packaging and project/equipment commissioning
- B. Assist Client in the development of an RFP/RFQ to hire a contractor to install the energy efficiency projects
- C. Analyze cost estimates and funding options
- D. Perform construction review, cost and value analysis
- E. Set up and maintain project accounting of budgets, commitments and payments
- F. Prepare and update cash flow projections
- G. Coordinate and monitor services of other specialty consultants to the Client
- H. Secure permits not included in the Consultants or Contractor's work

4. Bid and Award Phases

- A. Assist Client in reviewing bids
- B. Manage bid and award activities

5. Construction Phase

- A. Administer construction contract
- B. Plan and manage procurement process
- C. Establish coordination procedures
- D. Conduct job meetings
- E. Maintain project documentation
- F. Establish a status reporting system
- G. Process changes
- H. Work with public regulatory agencies
- I. Monitor contractor compliance with labor and payroll laws
- J. Establish and implement a quality control and commissioning program
 - 1. Provide inspection
 - 2. Oversee pre-functional testing
- K. Track Project Cost
 - 1. Review contractor cost breakdown
 - 2. Estimate change order costs
- L. Provide Construction Scheduling
 - 1. Review contractor's schedule
 - 2. Monitor contractor's schedule progress
 - 3. Review time extensions and change orders
- M. Process Progress Payment Requests
 - 1. Verify invoices to justify expenditures and project milestones
 - 2. Handle contractor disputes

6. Project Completion Phase

- A. Review and recommend release of contractor/subcontractor retentions
 - 1. Resolve change orders and contract disputes
 - 2. Handle progress payment requests
- B. Complete project/equipment commissioning and conduct final testing and recommend final project acceptance
 - 1. Oversee functional test
 - 2. Verify that test results show that design intent has been met
- C. Ensure facility staff has been trained
 - 1. Obtain Operation and Maintenance Manuals
- D. Complete final administrative activities
 - 1. Prepare or have subcontractor prepare final project documents (e.g., blue prints, operation and maintenance manuals)
 - 2. Record documents
 - 3. Prepare final report

PROPOSAL REQUIREMENTS

The contract shall be awarded to the one who meets the minimum technical proposal score and provides the lowest cost proposal (if RFP) or the highest technical proposal score with acceptable cost (if RFQ). Each proposer will respond to the following areas:

1. **Understanding of the project:** Discuss your understanding of the project scope and objectives.
2. **Approach:** Discuss your approach, with specific references to the services requested in the RFP/RFQ. Highlight unique services and management tools, such as value engineering. Indicate the benefits of your approach. Suggest additional services to those requested in the RFP/RFQ and indicate their benefits to the Client.
3. **Organization:** Define project team and organization and include:
 - A. Organization chart
 - B. Team member resumes and identification of those with California Professional Engineering registration and/or California Contractor's Licenses and specify numbers
 - C. Description of relevant experience of each team member
 - D. Indicate labor categories to be used for each task in the Work Scope
 - E. Indicate percentage commitment of key staff in each phase. Any staffing changes during the project will be subject to Client approval in writing.
 - F. Discuss percentage and type of work to be done by minority, women, and/or disabled veteran business enterprises.
 - G. Complete Table 1, page B-10 This table lists the CM team members in a format that can be used to also verify consistency with the Cost Proposal. The following is a description of the table contents:
 1. Work Classification: Specifies the work classifications of the CM team, such as project manager, specialty inspector, engineering, general inspector and administrative support.
 2. Percent Work Classification Used on the Contract: Indicates the percentage of time that a particular work classification will be working on your project.

3. Name: Identifies the individual CM team member.
 4. Academic Degrees: Indicates the degrees held by CM team members.
 5. Professional Registration/Contractors Licenses: Indicates the engineering or contractor's licenses held by team members.
 6. Percent available for CM Work: Identifies the percentage of time the team member will be available to do work on the project.
 7. Contract Responsibilities: Specifies the work to be performed by a particular team member.
4. **Firm Qualifications:** Provide a brief description of past CM work:
- A. Describe the CM services provided on similar projects including construction cost and dates and names of team members who worked on the project
 - B. Describe the firm, including:
 1. Years in operation
 2. Office locations
 3. Number of personnel
 4. Number of personnel in local office
 - C. Discuss current jobs including dollar value and percent completion
 - D. Describe financial capabilities and provide references and latest audited report
 - E. Discuss insurance coverage types and limits (\$1,000,000 professional liability coverage is required)
 - F. Identify any perceived or real conflicts of interest that may affect job performance
5. **Client References:** Provide client references including the contact name, position, address, phone number and a brief description of the work provided by the CM. Provide a minimum of 5 references. References must be of those that have had projects similar to the clients.
6. **Exceptions and Clarifications:** Indicate any exceptions or clarifications associated with your proposal.

7. **CM Cost:** If the selection is being made through the RFP process, prepare separate cost proposal. This cost proposal will contain the names of individuals who will be working on the project, their classification, the time they will be spending on various tasks, and their loaded hourly rate (loaded hourly rate = base hourly rate+overhead and general administrative cost percentage+profit percent). The loaded rate could include all direct expenses anticipated with your project (e.g., copying, mailing). Pages B-12 to B-16 contain worksheets for listing individuals, tasks and hourly rates.

If an RFQ is used to select a CM, the proposer with the highest technical rank can complete a worksheet similar to pages B-12 to B-16. The information on the worksheet can then be used to negotiate the final costs.

8. **Other Information:** Make your responses concise and specific. Include supporting materials such as work samples in an appendix.

**Table 1
List of Company CM Technical Personnel Assigned
(Complete one form for each company on the CM team)**

CM Firm: _____

Subcontractor (if applicable): _____

Work Classification*	% Work Classification Used on Contract (based on hours)**	Name	Academic Degrees	Professional Registration or Contractors License (include number)	% Available for CM Work	Contract Responsibilities
Project Manager	10%	J. Smith	BSME	PE (M--1999)	20%	Develop approach, schedule and budget
		B. Brown	BSME, MBA			
Specialty Inspector	10%	P. Wills	BSEE			
		D. Smith	BS			
Office Engineering	50%	M. Smith	BA			
		T. Skier	BS, MS			
General Inspector	20%	A. Pearson	PHD			
		J. Doe	BS, MS			
Administrative	10%	K. Thompson	AA			
		K. Douglas	BA			

* Typical work classifications:

PM = Project/Construction Manager

SI = Senior/Specialty Inspector

** This column should total up to 100%.

OE = Office Engineer

GI = General Inspector

AS = Administrative Support

Table 2
Loaded Hourly Rates for Assigned CM Staff

Work Classification (Table 1)	CM Staff Names	Loaded Hourly Rate*
PM = Project/Construction Manager		
SI = Senior/Specialty Inspector		
OE = Office Engineering		
GI = General Inspector		
AS = Administrative Support		

* Use these Loaded Hourly Rates in the Table 3 Worksheet.

Estimating CM Cost

(Instructions for completing Table 3)

Instructions: *Each bidder will complete Table 3 as part of the Cost Proposal (RFP). For RFQs, this table could be submitted by bidders with the highest technical score as part of the RFQ.*

Step 1: Identify the specific work classifications and the corresponding average hourly rates for each Task. Use the work classifications from Table 1 and the loaded hourly rates for each classification from Table 2.

Step 2: Estimate the number of hours worked by each classification in the tasks specified in the Worksheet.

Step 3: Multiply hours by the hourly rate to get the cost for each task and work class.

Step 4: Add the total hours and dollars for each work class and project phase. Add all project phase costs to obtain the total project cost.

Step 5: Verify that the total classification percents match those in the technical proposal (Table 1). If the classification percents vary, then it could be the basis for disqualifying the proposal.

Step 6: The winning bidder is the one with the lowest cost if selection is based on the RFP process.

**Table 3 (Page 1 of 4)
Worksheet for Estimating CM Cost**

Task	PM		SI		OE		GI		AS	
	hrs	\$/hr								
Preconstruction Phase										
Determine approach										
Create project installation plan										
Prepare RFP/RFQ										
Prepare technical specifications and construction plans										
Secure permits and meet regulatory requirements										
Develop project budget and schedule										
Hold project team meetings										
Phase Total										

**Table 3 (Page 2 of 4)
Worksheet for Estimating CM Cost**

Task	PM		SI		OE		GI		AS			
	hrs	\$/hr	\$									
Construction Phase												
Construction site management												
Construction inspection services												
Review construction equipment & materials												
Review change orders												
Update construction budget & schedule												
Hold project team meetings												
Develop O&M manuals & training												
Conduct final testing & develop acceptance criteria												
Phase Total												

Table 3 (Page 3 of 4)
Worksheet for Estimating CM Cost

Task	PM		SI		OE		GI		AS	
	hrs	\$/hr								
Post Construction Phase										
Secure as-built drawings										
Finalize construction contract documents										
Phase Total										

**Table 3 (Page 4 of 4)
Worksheet for Estimating CM Cost**

Task	PM		SI		OE		GI		AS	
	hrs	\$								
Project Totals										
Pre-construction										
Construction										
Post-construction										
Totals by Work Classification										
Classification Percent (Based on Hours)*										

* These percents should match those identified in Table 1, Percent Work Classifications Used on Contract Column.
Work class hours/Total hours for all work classes.

SUM OF ALL LABOR CATEGORIES

TOTAL HOURS: _____

TOTAL COSTS: _____ (Low cost wins for RFP, costs can be negotiated for RFQ)

TECHNICAL SELECTION CRITERIA AND EVALUATION PROCESS

Selection Criteria

The Client will evaluate and rank proposals and interview based on the following criteria and weighing factors:

Criteria	Weighing Factors
<ul style="list-style-type: none"> • Understanding of Client’s project needs <ul style="list-style-type: none"> - Proposed project staff - Proposed schedule - Responsiveness to project issues 	
<ul style="list-style-type: none"> • Identification of innovative approaches and ideas 	
<ul style="list-style-type: none"> • Firm experience <ul style="list-style-type: none"> - Number of similar type projects - Years of experience - Number of awards for doing similar type projects - California Contractor’s Licenses, type and standing 	
<ul style="list-style-type: none"> • Commitment to your project <ul style="list-style-type: none"> - Number of employees who have done similar work - Availability of key CM staff - Dollar value and percent complete of current CM projects 	
<ul style="list-style-type: none"> • Personnel experience <ul style="list-style-type: none"> - Number of employees with similar CM experience - Number of employees with more than 15 years of similar experience - Number of employees with California Professional Engineer registration 	
<ul style="list-style-type: none"> • Financial status of the bidder <ul style="list-style-type: none"> - Financial capacity - Bonding capacity - Insurance coverage 	
<ul style="list-style-type: none"> • References 	
<ul style="list-style-type: none"> • Quality of proposed project team 	
Total Points Possible	
Minimum Points Required for Passing	

Evaluation Process

1. The evaluation team will consist of staff of the client.
2. Proposals will be ranked according to the selection criteria and weighing factors identified in the table on page B-17.
3. The three highest ranking proposals will be interviewed and the final technical score will be tabulated.

IF RFQ:

The Client will negotiate cost with the top ranked firm. If a mutually satisfactory cost cannot be reached, the Client will negotiate with the next highest ranked firm and continue this process until reaching an agreement.

IF RFP:

The Client intends to select the firm that meets the minimum technical score and has the lowest cost proposal.

Right to Reject Any or All Proposals

The Client reserves the right to award the contract to any firm or to cancel or postpone the selection at any time if necessary. A pre-proposal conference is scheduled for Time at Location. Representatives of the Client will attend to discuss the project and answer questions.

WORKSHEET - RFP/RFQ PREPARATION
Summary of Required Items

This worksheet serves as a checklist of important issues when preparing a project-specific RFP/RFQ. If a requested response does not apply, write N/A.

RFP Versus RFQ	YES	NO
• Do legal restrictions relating to the use of price as a selection criteria apply?		
• Will price be used as a selection criteria?		
• The document is an RFP (refer to page 22).		
• The document is an RFQ (refer to page 22).		
Use of Small, Minority Owned, Women Owned, or Disabled Veterans Owned Business Enterprises	YES	NO
• Do requirements for the use of small, minority-owned, women-owned, or disabled veteran-owned businesses apply for this project?		
• If yes, indicate the minimum percentage for the following:	Percent	
– Small Businesses		
– Minority Owned Businesses		
– Women Owned Businesses		
– Disabled Veteran Owned Businesses		
Identification of Potential CM Candidates	YES	NO
• Is there a list of potential CM candidates?		
• If yes, specify list to be used:		
• If no, specify how list will be generated:		

Introduction	YES	NO
<ul style="list-style-type: none"> • Are the contact names, addresses and telephone numbers of potential proposers correct? 		
<ul style="list-style-type: none"> • Types of CM services requested (refer to pages 11-19): 		
<ul style="list-style-type: none"> • Sections to be included in RFP/RFQ (refer to pages 22-29): 	YES	NO
<ul style="list-style-type: none"> – Introduction 		
<ul style="list-style-type: none"> – Description of Project 		
<ul style="list-style-type: none"> – Scope of Work 		
<ul style="list-style-type: none"> – Proposal Requirements 		
<ul style="list-style-type: none"> – Selection Criteria and Process 		
<ul style="list-style-type: none"> – Closing 		
<ul style="list-style-type: none"> – Other 		
<ul style="list-style-type: none"> • Location of Project: 		
<ul style="list-style-type: none"> • What are the restrictive conditions that apply to this project? 		

Description of Project	YES	NO
<ul style="list-style-type: none"> • Have descriptions been prepared on the following project categories? 		
<ul style="list-style-type: none"> — Lighting 		
<ul style="list-style-type: none"> — Controls 		
<ul style="list-style-type: none"> — HVAC 		
<ul style="list-style-type: none"> — Other 		
<ul style="list-style-type: none"> • Is the energy audit included as an attachment to this RFQ/RFP? 		
Planned Project Implementation Phases	Start date	End date
<ul style="list-style-type: none"> — Phase 1: Preconstruction 		
<ul style="list-style-type: none"> — Phase 2: Construction 		
<ul style="list-style-type: none"> — Phase 3: Post Construction 		
<ul style="list-style-type: none"> — Phase 4: Other 		
<ul style="list-style-type: none"> — Phase 5: Other 		
Scheduling Constraints	YES	NO
<ul style="list-style-type: none"> • Are there known scheduling constraints? 		
<ul style="list-style-type: none"> • List of scheduling constraints: 		

Project Responsibilities	Owner	CM
• Who is responsible for coordinating the project schedule with the facility operation schedule?		
• Who is responsible for contracting with consultants or contractors?		
• Who is responsible for establishing performance standards and commissioning testing?		
Site Information	YES	NO
• Is a site plan included?		
• Are there any special work conditions?		
— Presence of hazardous materials?		
— Hazardous work locations?		
— Other?		
Scope of Work	YES	NO
• Has the list of CM services been identified?		
Proposal Requirements	YES	NO
• Will a separate cost proposal be required?		
• Will cost be negotiated with the highest ranked firms?		
• Will the following proposal sections be required?	YES	NO
— Understanding of Need		
— Approach and Services		
— Staffing and Organization		
— Firm Qualifications and Experience		
— Exceptions and Clarifications		

Selection Criteria	YES	NO
<ul style="list-style-type: none"> Has the selection criteria been established? 		
<ul style="list-style-type: none"> The selection criteria for this project is (refer to page 30-37): 		
Evaluation and Selection	YES	NO
<ul style="list-style-type: none"> Will a shortlist of the highest ranked proposals be developed? 		
<ul style="list-style-type: none"> Will interviews be part of the selection process? 		
<ul style="list-style-type: none"> Will access for inspection of site be granted to the proposers? 		
Proposal Schedule		
<ul style="list-style-type: none"> The proposal will be due on: 		
<ul style="list-style-type: none"> Issue date of RFP/RFQ: 		
<ul style="list-style-type: none"> Pre-bid meeting date: 		
<ul style="list-style-type: none"> Notification date for shortlist firms: 		
<ul style="list-style-type: none"> Notification of interview schedule: 		
<ul style="list-style-type: none"> Contract preparation period: 		
<ul style="list-style-type: none"> Start work date: 		

Evaluation Team Members:		
Closing	Address	Phone
<ul style="list-style-type: none"> Name of contact for your organization concerning this RFP/RFQ: 		
Contacts	YES	NO
<ul style="list-style-type: none"> Will access to owner' staff be restricted during the proposal period? 		
<ul style="list-style-type: none"> — Telephone calls permitted? 		
<ul style="list-style-type: none"> — Visits permitted? 		

APPENDIX C
RECOMMENDATIONS FOR SCOPE OF WORK FOR THE
CONSTRUCTION CONTRACTOR

This appendix contains recommended areas to be included in the contract with your selected construction contractor and the role of your construction manager in ensuring that the energy efficiency measures are properly installed, commissioned, and tested.

RECOMMENDATIONS FOR SCOPE OF WORK FOR THE CONSTRUCTION CONTRACTOR

The contractor shall work with the construction manager and other design team members to complete the assigned work.

For buildings with energy efficiency projects, the contractor's assignment shall include, but not be limited to, the following:

- **Kick-off Meeting**

After the construction contract is signed, the contractor shall have a kick-off meeting with the construction manager, architect, mechanical engineer, electrical engineer, and other design team members as specified by the facility. The purpose of this meeting is to: a) introduce various parties, b) discuss the responsibilities and roles of each party involved, c) discuss a preliminary time schedule, and 4) discuss any site-specific requirements for that facility.

- **Schedule**

The contractor shall prepare a detailed schedule for construction, installation, inspection, commissioning, trial run, performance inspection, waste disposal, cleaning, training of operation and maintenance personnel, and equipment/system turnover. The contractor shall submit this schedule to the construction manager for approval.

- **Reporting**

The contractor shall submit reports at a predetermined time interval, as determined by the construction manager. The reports shall include, but not be limited to, the following:

- ✓ Construction progress reports
- ✓ Installation reports
- ✓ Inspection reports
- ✓ Waste disposal reports
- ✓ Commissioning reports
- ✓ Trial run reports
- ✓ Performance test reports

- **Change Orders**

The construction, installation, equipment specifications, inspections, commissioning, and testing shall be according to the design document. Any change or deviation from the design document must be pre-approved by the construction manager and engineer or architect.

- **Construction and Installation**

Construction and installation shall be according to the applicable codes and standards. Where applicable, the work shall be performed by certified personnel. The construction manager or his designee can inspect any material, equipment, procedure, or method used at any time.

- **Inspection and Testing**

The contractor shall assist the owner's inspector to conduct equipment, material, construction and installation inspection. It is the responsibility of the contractor to ensure that the inspection and testing is completed as specified in the contract and according to the project schedule. Construction and installation shall not be deemed complete unless the required inspection and testing is completed. At the direction of the construction manager, the contractor will be required to conduct an inspection or testing and submit a report to the construction manager.

- **Commissioning**

The construction manager may hire an independent commissioning agent depending on the complexity of the project. If commissioning is the responsibility of the contractor, the contractor shall prepare a commissioning plan and schedule and submit them to the construction manager for approval. The contractor shall provide all the instrumentation and tools required for commissioning. The construction manager or its designee shall supervise the commissioning process and the pre-functional and functional tests for the specified energy efficiency equipment. The contractor shall prepare a commissioning report and shall submit it to the construction manager for review and approval.

- **Training**

During the commissioning process the contractor shall start training the operations and maintenance personnel. The training shall consist of classroom training, a facility walk through, and actual staff involvement during commissioning, performance inspection and trial run. The contractor shall ensure that the staff is capable of properly operating, maintaining, and handling emergency situations in an efficient and safe manner.

- **Trial Run**

The contractor shall complete the trial run as specified in the design document or as recommended by the equipment manufacturers. The operating staff shall be involved during this process but the contractor shall be responsible for any malfunction or operating errors.

The contractor shall take readings of the operating parameters, as recommended by the manufacturers, and shall submit these readings to the construction manager for review and approval.

- **Performance Testing**

The construction manager may hire an independent agent for this process, depending on the complexity of the project. If the contractor is to conduct testing, the contractor shall provide all the instrumentation and tools required for performance testing. The contractor shall prepare a test plan and schedule and provide these to the construction manager for review and approval. The construction manager or its designee shall supervise the performance testing process. The contractor shall prepare a performance test report and shall submit it to the construction manager for review. The contractor shall discuss the results of the tests with the construction manager.

The contractor shall ensure that the equipment and the building perform according to the specifications written in the design document. If the equipment and the building fail to meet the performance standards, the contractor shall recommission the equipment, modify or change any equipment with the pre-approval of the construction manager. The construction manager or its designee will make the final determination of whether the equipment meets the designed performance standards.

- **Documentation**

The contractor shall submit all the required documents to the construction manager. The documents to be submitted include, but not be limited to, the following:

- ✓ Operating procedures
- ✓ Maintenance procedures
- ✓ Operation check lists
- ✓ Maintenance check lists
- ✓ Operation and maintenance manuals
- ✓ Lists of recommended spare parts
- ✓ Contact information for any questions
- ✓ As-built drawings

- ✓ Construction and installation reports
- ✓ Construction and installation inspection reports
- ✓ Commissioning reports including set points
- ✓ Performance test reports including test and balance reports
- ✓ Trial run reports including operating parameter readings
- ✓ Waste disposal reports
- ✓ Material safety data sheets