

### Report on Effectiveness of the Construction Manager at Risk Project Delivery Method

The project management plans described below, establish several elements or criteria for university project staff to manage and project reviewers to hold university project staff accountable to.

The third-party review addresses several elements necessary to conclude whether best value is achieved. (An interim review was recently completed for the Life Sciences project. It is too early in the contract for an interim audit for the arena.) Six of those elements are summarized below:

**Qualified Team Selected:** through the vetted Request for Proposals (RFP) process, UA staff is able to evaluate and select the firm and project team members best qualified to perform in the University's cost, quality and schedule interest. Team members are selected based on experience and proven success with complex facilities such as the Life Sciences building or the Sports Arena. The qualified team is selected based on a combination scoring of bid elements and qualifications.

**High Quality Preconstruction Services:** value analysis done through the design process helped the UAF team identify the best options for various building systems to ensure best value was achieved. Constructability issues were addressed and potential scope gaps were identified and handled to ensure a complete design and avoid costly change orders during construction.

Although still relatively early in the project, the advantages of having the CMAR contractor participate in the sports arena design process are already becoming apparent. The cost estimate for the 65% design came in significantly over budget. The Design Team and the CMAR contractor worked with the rest of the Project Team to modify the design to reduce cost without loss of program support or ability to generate revenue to cover operating costs. Projected O&M Costs have actually reduced as a result of the reduction and/or deletion of some of the building system components included in the original design. The Phase 2 construction package will include several additive alternates that will be incorporated into the project as construction progresses and remaining construction contingency funds can be utilized. This collaborative effort would not have been possible without the participation of the CMAR contractor during the design process.

**Cost Certainty:** the University receives cost certainty through an open book contract with audit provisions, early and regular estimate updates and contingency and change management - the final cost of the project is always a known metric.

**Contingency Management:** the University established strict rules within the revised RFP clearly identifying the various types of contingencies and the restrictions placed upon them. The project team vigorously manages these contingencies and must approve all expenditures.

**Risk Identification and Mitigation:** with early involvement in design and planning, the University benefits from the contractor's expertise to identify and manage project risks proactively. Early identification results in planning that avoids costly mistakes.

**University Expertise and Management:** assembling a team of highly experienced University project staff, creating well thought out project management plans and executing them has been a key component to setting up and running the project delivery process to achieve best results from the CMAR.

Additional detail is summarized for three of these components considered most critical for achieving best value:

### **Cost Certainty**

1. How are competitive pricing elements incorporated in the CMAR RFP?  
The competitively bid elements include the fee for Overhead and Profit, a fee for Preconstruction Services, and a fixed amount for a group of General Conditions (GC). Scoring for the competitively bid elements makes up 25% of the overall proposal score. The fees are not negotiable and the bid elements of the GC cost become the basis of final guaranteed maximum price (GMP) negotiations.
2. How is controlling total project cost achieved? How do we know the GMP is reasonable?  
A CMAR process is not a guarantee of the lowest construction cost, but neither is Design Bid Build (DBB) when the risk of change orders is factored in. The owner's project manager must aggressively manage the owner's expectation to achieve low project cost, keeping the construction budget in mind at all times. The owner must also be very clear with the CMAR the intent to conduct a complete audit and verification of the GMP, both before and after the construction services agreement is issued. Finally, the owner must create a team environment with the CMAR such that there is a shared trust in the end goals: the owner gets the best product at a reasonable cost ahead of schedule, and the contractor can take pride in a job well done, complete early and move on to the next project. These conditions reduce the normal tensions associated with DBB, create a more collaborative environment for the project, reduce the risk of a claim, ensure building quality goals are met, and can provide a lower final cost when compared to DBB.

The key to cost reasonableness begins well before the CMAR is placed under contract. The owner must complete multiple iterations of a detailed project construction cost budget developed by a third party estimator. The budget must be updated and maintained throughout project development. During preconstruction services, the CMAR will also submit multiple cost estimates and the owner must stringently review each of them and require the CMAR to reconcile estimates against each other with the goal of maintaining the same construction budget throughout the design. There must be strict fiscal management by the university team, that includes detailed review of each GMP line item to include labor, materials, and equipment with open access to the contractor's cost records. The owner and the CMAR must develop a trusting relationship and the CMAR must understand and advocate for the owner's desire to have the lowest GMP. These factors allow the owner to openly negotiate all aspects of the GMP.

3. Can providing the designer's estimate to the CMAR affect the GMP through cost manipulation or price-setting?  
It is possible for "gaming" to occur in all procurement methods, but for a CMAR contract the designer's detailed estimate is used to keep quantities and material costs in check as the GMP is developed. Managing the cost and preventing manipulation is controlled by having a clear understanding of the total quantities of labor hours and material quantities required to do the work, applying industry standard rates for labor, incorporating the low bids for material cost, and then applying the pre-determined fixed fee. Cost manipulation by the contractor is difficult to achieve on direct labor and materials in an open book setting as long as the owner's project manager remains diligent about performing detailed cost evaluation. Cost management also includes requiring a set portion of the project scope be lump-sum bid "in the market" to take advantage of a competitive market, and lower the risk of cost manipulation. Similar to the negotiated or self-performed work, the university must participate in the contractor's public bid

process, evaluating the bid tabulations and signing off on the CMAR's recommended subcontractor award.

4. How does the university maintain control over the total General Conditions (GC) cost? How is the CMAR managed by the university to ensure accurate use of the GC budget?

First and foremost, the CMAR RFP must at least require the contractor's project staff rates are bid in the response to the RFP and ensure these rates are used in setting the GMP. The owner must also negotiate the GC's using the contractor's actual cost records, set the duration of the cost of the GC's to the duration of the project, only agree to those allowable and allocable GC costs needed to directly run the project, and scrutinize each line item in the GC cost for reasonableness. After the GMP is established, the owner's project team approves the GC's on a cost-plus basis such that the CMAR can only bill for actual time, equipment, and material spent directly managing the job. Finally, monthly review of the GC cost and quarterly financial reviews of all files related to the general conditions are tools that are used consistently to lower the final cost of the general conditions. Project staff must ensure any realized savings in the GC's is returned to the university.

### **Contingency Management**

5. What are the different contingency types and amounts in the revised university contract?

- 1) Contractor Held Construction Contingency which is 2% of the maximum allowable construction cost (MACC),
- 2) Contractor Held Owner Contingency which is created from realized savings in Cost Plus line items and buy-outs of subcontracts, and
- 3) Owner Held Contingency which is 3% of the GMP.

6. What control does the university retain over each of these contingency funds?

The university retains total control over all contingency funds and must provide written authorization before the CMAR can bill against any contingency. The Project Manager, with oversight by the contracting officer, is authorized to approve expenditures from the contractor held contingency. The RFP provides very specific criteria for the use of the contingency: unforeseen conditions, subcontractor buy-outs, mutually agreed upon construction cost resulting from bid errors, design errors, or design omissions, and owner requested changes.

7. How are requests for information (RFIs) and potential change orders managed?

Under a CMAR contract RFIs are first addressed in a team setting and collaboratively answered to create the best solution for the problem. Under a DBB contract, RFIs and their associated cost often create an adversarial relationship between the owner and the contractor because being reimbursed for the cost of changes is the contractor's first concern.

In a CMAR setting many of the issues that become RFIs and change orders under a more traditional low bid method are resolved instead during the design phase. The owner then manages the cost associated with RFIs on an on-going basis and sets up an auditable cost structure only paying for the actual work. Managing change order cost, which equals the final project cost, is more effective under a CMAR contract and can bring the final cost of both procurement types back in line with each other.

## **Project Management Plans**

8. Have management plans been put into place? Are they being followed? How does the university know the CMAR contractor is being managed properly?

For the Life Sciences project UAF has implemented two management plans: the CMAR contractor Management Plan and the Project Management Plan. UAF files quarterly reports and plan updates with the Chief Facilities Officer (CFO) and holds quarterly meetings with all project participants and stakeholders to review project progress and outcomes, highlight and resolve issues, and allow the UAF Vice-chancellor and the CFO to offer input. UAF has contracted with a third party auditing firm experienced with the CMAR delivery method. Their report is delivered to the Vice Chancellor with a copy to the CFO, and provides an ongoing assessment of how UAF's project team is managing the contractor and following the management plan. Any recommendations in the report are reviewed at the quarterly stakeholders meeting or acted upon by project staff, as appropriate.

UAA is just beginning to set up management practices for the Sports Arena. UAA will be utilizing the services of a third party auditor and will include management practices in their review. The audit reports will be forwarded to the UAA Vice Chancellor Administrative Services and the Chief Facilities Officer, who will also receive quarterly briefings regarding contract status, after construction begins.

9. How are cost plus features of the CMAR contractor audited?

Monthly, the project team reviews each line item of the pay request and compares it to activity reports submitted daily by the CMAR and/or written by the team itself. The project team also requires a detailed budget forecast from the CMAR that annotates realized savings, subcontractor buy-outs, and anomalies in the project construction budget. On a quarterly basis, the university's fiscal team performs a financial review of the CMAR's bookkeeping and record keeping at their home office to ensure charges are being adequately coded to the correct categories, identify and correct any billing discrepancies, and determine if any other projects are being billed against the university's project (i.e. the project should not be used to provide cash flow for the contractor's other projects)

10. What are the expectations for the university's project team and how do the members ensure best value is achieved under a CMAR delivery method?

The members of the university's project team must have documented construction experience with similar projects, a thorough understanding of procurement laws and regulations, and must be proven to be fiscally responsible and willing to aggressively manage the expenditure of project funds. The project manager (perhaps the single most important staff position) must guard the fiscal resources as though they were his/her own and be financially accountable to the administration and the Board of Regents. The project manager must be able to explore the details of the project, handle the detailed cost negotiations, and thoroughly review the CMAR's accounting records. The university project team must have the experience to manage a cost-plus contract and have the knowledge to perform activities such as reviewing daily reports for equipment and man-power and relating them to monthly pay estimates. With these skills and experience, the team can effectively keep project cost within or under the GMP, police cost manipulation, and more easily reach expected project goals. UAA and UAF assign their senior CMAR-experienced project managers to administer these projects and contracts.

## **Excerpt from OAC's initial "CM at Risk Process Review" for Life Sciences Project**

### **Summary of Performance against Objectives**

The University of Alaska and its internal user groups are receiving good overall value from the Construction Manager at Risk (CMAR) delivery method. Led by UAF capital projects staff members, the project team has followed good industry practice in building solid collaborative project teams while maintaining cost competitiveness and transparency necessary for the (expenditure) of public funds.