CM at Risk

Construction Management at Risk (CM at Risk), similar to established private sector methods of construction contracting, is gaining popularity in the public sector. It is a process that allows a client to select a Construction Manager (CM) based on qualifications; make the CM a member of a collaborative project team; centralize responsibility for construction under a single contract; obtain a bonded guaranteed maximum price; produce a more manageable, predictable project; save time and money; and reduce risk for the client, the architect and the CM. CM at Risk, a more professional approach to construction, is taking its place along with design-build, bridging and the more traditional process of design-bid-build as an established method of project delivery.

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**SOME HISTORY**

**The traditional process**

Public organizations traditionally have selected architects and engineers (AEs) based on qualifications and general contractors (GCs) based on competitive bid.

The rationale for this difference in selection procedure is that it’s difficult to define and measure the experience, wisdom or creativity of AEs. And AEs typically represent their client’s interests with a fiduciary responsibility. So clients avoid bidding and look for the most qualified firm.³

However, construction has been considered a tangible product that can be specified and measured, not a professional service. So public organizations buy brick and mortar by competitive bid. The conventional wisdom is that bidding construction work gives everybody an equal chance to do business on the public dollar, prevents favoritism and gives the appearance of least cost.

But today, increasing industrialization and specialization in the construction industry invalidate this conventional wisdom. Building construction can be entirely subcontracted. And most of the cost and technical knowledge for the manufactured portion of buildings resides with specialty trade contractors and manufacturers. GCs are now managers of multiple subcontractors and specialists. They win work by skillful purchasing and management of subcontracts.

**Negotiated GMP contracts**

Private sector clients recognize that contractors have experience, wisdom and creativity, too. They want this talent on their side of the table during the design phase, not just during construction. And they want a more manageable and predictable procurement process for construction. So they frequently select a GC during design to provide advice on cost, schedule and constructibility. As contract documents near completion, the contractor negotiates or takes bids from subcontractors and builds the project under a cost-plus-a-fee contract, usually with a guaranteed maximum price (GMP). (However, if a GMP is given well before construction drawings are complete, conflict may arise over what was logically implied by the drawings.)

³ Federal procurement regulations and some state laws prohibit bidding as a method of selecting AEs and stipulate that they be selected for their qualifications.
A deliberate, phased procurement of subcontracts benefits the project. During the completion of construction drawings a GC will often negotiate prices for alternate building systems (such as elevators or mechanical equipment). When the most cost-effective system is selected, the AE will design around it. This produces drawings that are specific to systems that are actually used and reduces errors.

The project also benefits from the knowledge of construction technology and cost that the GC, specialty trade contractors and manufacturers provide during design. Furthermore, since the client chooses the firm based on qualifications and can do so again, the GC wants a good recommendation and, hopefully, a repeat client. This motivates the GC to serve the client’s interest.

**Agency CM**

In an attempt to gain similar benefits (but restricted by procurement regulations), public clients often select construction management organizations under professional service contracts—often under AE procurement regulations. The CMs provide advice during design, take bids for construction from multiple prime trade contractors and then manage the prime trade contractors in the functional role of a GC. However, the client holds the contracts to keep the CM in a professional position and to avoid the appearance that the CM is a vendor of brick and mortar.

These clients and CMs often use fast-track procedures. When this occurs, the CM may provide a professional guarantee early in the project. The guarantee typically states that if the project bids in over the budget, the CM will work with the architect to reduce the cost of the project.

While most CMs deliver successful projects, many clients are troubled by issues such as:
- the administrative burden of managing many contracts for a single project
- concern about third party liability in the event one prime trade contractor damages another
- the lack of a single guaranteed, bonded price for the total project (although the trade contractors are typically bonded)

Since the clients hold the contracts, many feel the need to duplicate some of the CM’s oversight with a few representatives of their own. That often increases the client’s cost, confuses and weakens the CM’s role in the eyes of the prime trade contractors and adds complexity to the CM’s job. The
CM has a proactive (but often inexperienced) client to manage as well as a set of contractors.

Furthermore, the lack of CM industry standards can create problems. There are no licensing requirements as there are for architects and engineers and no bonding requirements as for general contractors. Occasionally, unqualified firms have produced poor results for clients that did not have the sophistication necessary to pick a qualified firm.

**A changing industry**

Contractors working with private sector clients have grown increasingly professional. They are paid fees for services and operate in their client’s interest just as the AEs with whom they collaborate.

Meanwhile, government procurement regulations are changing. Florida recently passed legislation that allows CM at Risk in the public sector, and Texas passed laws allowing CM at Risk for school district and higher education construction. Federal Acquisition Regulations have also been modified to allow similar processes.3

As GCs have assumed professional roles, AE firms have developed construction management skills. To their traditional professionalism, AEs have added construction experience and a willingness to furnish bonds and to guarantee cost and schedule. CM companies that have provided agency CM are providing CM at Risk.

The result of these changes is a process that allows a client to select a CM as a professional based on qualifications, experience and reputation. The CM subcontracts by proposals or by competitive bid from trade contractors. The process makes the CM a member of a collaborative project team; centralizes responsibility for construction under a single contract; obtains a bonded guaranteed maximum price; produces a more manageable, predictable project; saves time and money; and reduces risk for everyone.

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2 The Construction Management Association of America (CMAA) is currently developing certification procedures for CMs. Initiated in 1996, this process is already gaining acceptance.

3 The Texas 74th Legislature passed Senate Bill No. 1 that authorized school districts to use a number of methods to procure construction contracts. The 75th Legislature amended Senate Bill No. 1 with Senate Bill No. 583, which specifically permits the use of CM at Risk for school district construction. (Texas Education Code, Title 2, Public Education, Chapter 44, Fiscal Management Subchapter B. Purchases; Contracts, 44.038. Contracts for Facilities: Construction Manager-at-Risk, Paragraph (a): A school district may use the construction manager-at-risk method for the construction, rehabilitation, alteration, or repair of a facility.)
CM at Risk: How to Do It

Selection procedures

A client’s objective should be to select the best CM for the project at a fair and reasonable fee. Most issue an RFP⁴, receive proposals and interview a short list of the most qualified firms. Some of the more careful clients visit the CM’s office, check references and examine their control systems in great detail.

Typically the information requested by the RFP will include:

- **Corporate information**: the CM’s company history, size, staff, general experience and a financial statement
- **Personnel information**: an organization chart with resumes of the project team and key corporate leaders
- **Systems approach**: a management plan and project management control systems that will be used on the project
- **Experience**: a list, with references, of similar projects the CM has done

The client then selects the CM using criteria such as purchase price, reputation, quality of services, past relationship with client, ability to comply with laws regarding underutilized businesses, etc. Typically, the client negotiates the CM’s fee and the terms of the contract.⁵ In some cases the fee may be part of the CM’s proposal or requested separately during the selection process. However, the client isn’t required and shouldn’t feel compelled to accept the lowest fee.

Ideally, selection occurs at the project’s beginning (before or just after selection of an architect).

Services

The CM becomes a collaborative member of the project team. Preconstruction services include budgeting, cost estimating, scheduling, constructibility reviews and value engineering studies. As construction

⁴ *Texas Education Code*, Title 2, Public Education, Chapter 44, Fiscal Management Subchapter B. Purchases; Contracts, 44.231. Purchasing Contracts, Paragraph (g) stipulates that for projects exceeding $25,000, school districts shall publish notice of the time by when and of the place where bids, proposals or responses to a request for qualifications shall be received in any newspaper in the county where the District’s central administrative office is located. Notices shall be published at least once a week for at least two weeks before the deadline for receiving bids, proposals or responses to a request for qualifications.

⁵ The American Institute of Architects has a standard form of agreement (AIA A121/CMC) and the Association of General Contractors has another (AGC 565). Both are good contracts.
drawings progress or near completion, the CM divides the project into appropriate scopes of work for bidding, prequalifies subcontractors and takes bids or accepts proposals for the work. The CM, architect and client review bids and proposals for compliance with the contract documents and determine which ones to accept. (They are not required to select the lowest bids, but there should be clear explanations if they do not, particularly if they have prequalified bidders.) The CM then prepares cost estimates for the unbid portion, adds a contingency and a budget for General Conditions construction items, provides a guaranteed maximum price and a bond and manages construction as a general contractor would. In some states a general contractor’s license may be required. It is an open book process: the CM tracks all the costs for the client’s and architect’s review.

**Bonding**

The CM provides the client with a performance and payment bond. The CM will also require bonds from major subcontractors.6

**The contingency**

**The CM’s contingency**  This contingency belongs to the CM if it is needed but is returned to the client if it goes unused. It is a stated line item within the GMP that reflects the incomplete nature of the drawings and specifications which limits the CM’s ability to predict the cost of unbid work with absolute accuracy. It may also cover unanticipated costs that arise during construction. The more work that is actually bid at the time the GMP is given, the smaller the contingency can be.

**The client’s contingency**  This contingency is for changes that the client inevitably will want to make during construction. The CM’s contingency lies within the GMP, the client’s contingency outside the GMP.

**The GMP**

The CM at Risk contract is a cost-plus-a-fee contract with a guaranteed maximum. It is the sum of the CM’s fee, the CM’s contingency, the General Conditions construction, all the subcontracts, plus an estimate for unbid subcontracts. The CM agrees to pay for costs that exceed the GMP and are not a result of changes in the contract documents.

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6Texas Government code, Chapter 2253 requires bonding for “contracts for construction, alteration, or repair of a public building or completion of any public work: (1) performance bonds for construction in excess of $100,000; (2) payment bonds for all construction in excess of $25,000.” Other states have similar regulations.
The GMP is subject to adjustment if the client or the AE makes changes. If the CM gives a GMP prior to the completion of construction documents, and if items not logically implied by the GMP documents are later added to the construction, the CM may increase the GMP.

**CM at Risk and fast-track**

With CM at Risk, construction can start before the AE finishes the contract drawings. However, most clients want a GMP before construction begins. A GMP can be given at any time in the process, but there’s a right and a wrong way to do so.

**The wrong way** If the AE brings all of the contract documents to partial completion and then asks the CM for a GMP, there is potential for conflict. The CM can’t get enforceable subcontracts with incomplete drawings. The CM must rely on the CM’s own estimates or must get unenforceable estimates from subcontractors. The process can work with competent people on the project team, but it is not legally sound. Disputes may arise over what was logically implied but not included in the incomplete plans and specifications. Put in this position, a CM is apt to estimate the work conservatively and include large contingencies. That will reduce the budget the AE has to work with. Conversely, if the CM underestimates the figures, claims and conflict will follow.

“Guaranteed Maximum Price” has a wonderful ring. A good CM makes it work, and with an adequate contingency, the process goes smoothly. But the CM may not anticipate items of work not yet defined in the construction drawings when the GMP is given. If the CM underestimates unbid work, or if the AE and owner make capricious changes or additions, the CM will submit change orders and claims, and the old adversarial relationship returns.

**The right way** A better approach is to bring a part of the contract documents to 100% completion. Then the CM can execute enforceable contracts with subcontractors for the completed part. The CM can add an appropriate contingency to the unbid portion and give a sound GMP. A 7.5% contingency on the entire project amounts to a 15% contingency on the unbid portion if half of the work is bid.

If the GMP is given before contract documents are complete, it’s a defined price for an undefined product. It has no more enforceability than a lump sum competitive bid based on incomplete contract documents. In either case, the size of the contingency inevitably varies with the completion of the contract documents. A GMP based on completed construction documents minimizes risk and the contingency.
What not to do

**Shared savings**  The CM should not share in the unused portion of the contingency that is part of the GMP. Some clients feel that they should share a portion of that contingency with the CM to motivate the CM to save money. That is unwise, for the following reasons:

- A client has balanced goals of cost, schedule and quality. If a CM is rewarded for achieving only one of these goals, the others may suffer.
- Trust is vital for the success of the project. If the CM shares in cost savings, the client and AE may suspect the CM is inclined to sacrifice quality or schedule to save money whenever the CM advises the client to reduce the cost of materials, methods or systems. That will hurt the culture of teamwork that is a major benefit to the CM at Risk concept.
- If the CM receives a portion of the unused contingency, the client may feel that the CM might set the contingency unfairly high or might pad estimates of unbiddable work when the GMP is given.

Many clients ask themselves what incentive a CM has to save them money. The answer is clear. In an environment where GCs must win jobs by competitive bid, they are motivated to maximize profits on each job. In this system, the major incentive is financial. But when the selection standards reflect qualifications rather than price, the CM’s motivation changes. Now the CM’s motivation is to build trust and confidence, provide service and obtain a good reference and repeat work. Another job is far more important than excessive profits on change orders.

**Self-performed work**  It is bad practice for a CM to furnish construction labor or do any portion of the construction work. This leads to a perceived (or real) conflict of interest, and perceptions are critical in the public sector. CMs should take bids for all construction work to give everyone a fair chance at the work. Then the CM should see to it that each subcontractor delivers what is specified. A CM cannot perform that role on work done by the CM’s own employees without being exposed to criticism for conflict of interest. And if a CM bids against other subcontractors, the subcontractors may feel that the CM has an advantage and cry foul.

**Equipment**  For similar reasons, CMs should not furnish construction equipment. Even though the CM might refer to some authority for fair rental rates, such rates are notoriously overstated. Also, there have been situations where CMs “parked” equipment on-site when it was not needed elsewhere. Even if the CM is scrupulously fair, perceptions can be misleading.
Terms of Payment

The payment structure commonly used for CM at Risk can confuse inexperienced clients. It is typically broken down into the following categories.

Fee

Typically the fee is a fixed lump sum, but it can also be a percentage. The fee covers the CM’s home office overhead, profit, and design phase services. It is usually broken down into two parts, design and construction. The fee usually runs 4–6% of the construction cost.

General Conditions costs

Reimbursable General Conditions costs are typically divided into two categories.

On-site overhead This refers to the cost (without home office overhead and profit but including benefits) of the CM’s full-time, on-site management staff and the cost of an on-site office and office equipment, utilities and communications. Some clients ask that the CM fix these costs and include them in the fee. However, making them reimbursable at cost (without overhead and profit) is usually better. The CM can adjust the site staff based on the needs of the project without the client feeling that the CM is acting out of self-interest. It provides a conflict-free approach to making corrections.

General Conditions construction This refers to the cost of non-permanent construction work that is necessary to support subcontractors. This work can include a job-site trailer with office equipment, communications and printing machines, tools, barricades, security fencing, signs, temporary power, utilities, clean-up services, site toilets or perhaps gravel for a workers’ parking area.

A CM can put these work items into a subcontract or procure them directly. For instance, the gravel, barricades or site toilets could be included in the package of work done by a foundation contractor. However, the foundation contractor will likely add overhead and profit to those costs. If the CM procures those items directly, the CM takes on more work and is reimbursed at the cost of the purchase without markup. That saves money for the client and makes more work for the CM. So a CM that proposes a large budget for General Conditions construction items may be saving money for the client and assuming extra work without extra fee. Therefore, the cost of General Conditions construction should not be considered part
of the CM’s compensation, and it should not be considered when comparing one CM’s fee to another. It should be reviewed in detail to compare the competing CMs’ understanding of the project.

**Subcontractor costs**

The CM is reimbursed the cost of the subcontracts without markup. Typically the CM doesn’t pay the subcontractors until the CM is paid. The CM agrees to a payment schedule with the subcontractors based on industry standards for payment and retainage, percentage complete, material on site and/or a cost-loaded CPM diagram. The CM calculates the amount due and then gains concurrence from the AE and approval from the client. The client pays the CM who promptly pays the subcontractors.
Minimizing Risk and Cost

The old way

Traditional construction projects are characterized by high risk. In traditionally bid construction contracts, subcontractor prices are verbally collected in a few weeks with little legal support and frequent misunderstandings about scope responsibility among subcontractors and general contractors.

Subcontractors often align with their favored general contractors, providing them with a lower price than their competitors. Yet no one general contractor has the entire set of best prices. And in the bidding process subcontractors float high bids early in the bidding cycle, afraid that their bid will leak to their competitors. As the bid deadline approaches, the prices drop. The lower prices aren’t always communicated to all the bidders. Furthermore, some subcontractors will pad bids, anticipating bid shopping after the contract is awarded. Competition among the subcontractors may be limited. Friendly relationships may influence who works on the project. The process is unprofessional, unbusinesslike and not cost-effective.

A GC is therefore aligned with subcontractors, manufacturers and suppliers in opposition to the AE and the client. Conflict is common. Plans and specifications always contain errors, clients always make changes, and bids always contain either speculation or outright errors. The result is strained relationships, and the work inevitably suffers.

The new way

CM at Risk minimizes risk for everyone. The experience, wisdom, creativity or engineering skills of AE and CM firms are combined at the table with the client’s understanding of requirements. This group has more complete control and unity. Together they command the classic tripod of functional requirements, design and construction. They are non-adversarial. They collaborate to make decisions. The CM can review the AE’s drawings and often catches errors, reducing the AE’s and client’s risk. The AE can review the CM’s approach to the work, making helpful recommendations. The CM is allowed to take bids or proposals from subcontractors during completion of contract documents, prior to the GMP, which reduces the CM’s risk and provides useful input to design. The procedure is more methodical, manageable, predictable and less risky for all.

The procurement of construction is also more business-like. Each trade contractor has a fair shot at being the low bidder without fear of bid shopping.
Each must deliver the best bid to get the project, so the client winds up with the low sub-set of prices. Competition in the community is more equitable: all subcontractors have a fair shot at the work.

A contingency within the GMP covers unexpected but justifiable costs, and a contingency above the GMP allows for client changes. As long as the subcontracts are within the GMP they are reimbursed to the CM, so the CM represents the client in negotiating inevitable changes with subcontractors.

Summary

The CM at Risk process has many characteristics attractive to clients, AEs and CMs.

1. The client makes selections based on qualifications, so the client hires better CMs. Because they are selected for their qualifications, CMs are inclined to maximize their service and their allegiance to the client in order to obtain repeat work and a good reference.
2. All parties collaborate. CMs provide advice on construction cost and technology during design to keep the project within budget and reduce design error; AEs are more involved in the construction process and make recommendations that are helpful to the project’s success.
3. Costs and fees are out in the open, helping eliminate adversarial relationships among the contractors, clients and architects.
4. Elimination of bid shopping also results in lower costs and better relationships in the community.
5. The CM can minimize risk to all by taking many or all trade bids prior to providing the GMP. Minimizing risk means minimizing cost to the client.

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