

# Construction Audit and Cost Control Institute

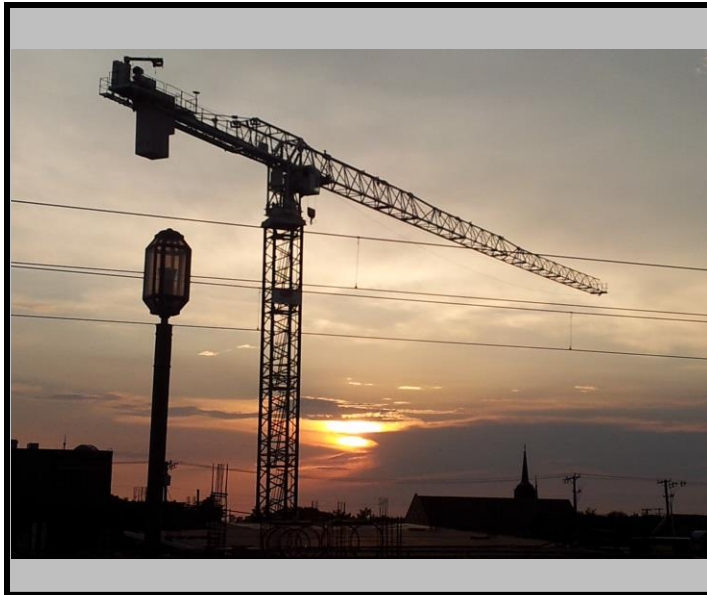
## **Should Owners allow CM/GC's to enter into lump sum (fixed price) subcontracts with themselves for self-performed work?**

We have been watching a trend develop, mature and grow over the last several years related to self-performed work by construction managers/general contractors (CM/GC) on cost plus with Guaranteed Maximum Price (GMP) prime contracts. [Note: These GMP type contracts are commonly used for Construction Manager at Risk (CMAR) prime contracts.]

The trend is a predominant preference of many CM/GC's to perform self-performed work on a lump sum basis.

## **Self-Performed Work By Construction Managers**





Self-Performed work by CM/GC's has been very prevalent for placing concrete and/or "general trades" ....

The lump sum value of the self-performed work is usually arrived at through the competitive bid process where the CM/GC solicits competitive bids for certain portions of work that they could perform with their own forces and/or sub-subcontract the work. Self-performed work by CM/GC's has been very prevalent for placing structural concrete and/or "general trades" miscellaneous project related work such as general clean-up, field engineering layout, hoisting, etc.

Many Owners also seem to favor this lump sum contract approach for self-performed work by the CM/GC because of the minimal amount of paperwork and the perceived advantage of competitive bidding to arrive at the lump sum amount for self-performed work.

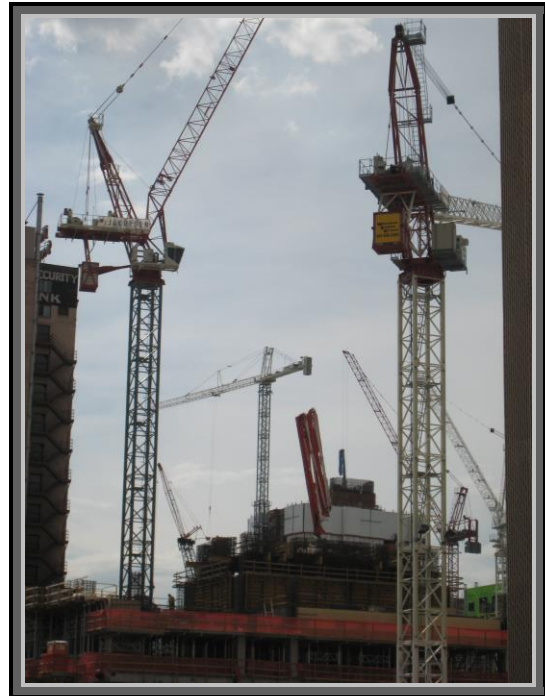
If you do not already have an opinion on competitively bid lump sum subcontracts for self-performed work, you might be asking "what's wrong with this approach?"

**We recommend that Owner organizations consider the following before allowing their CM/GC's to enter into lump sum subcontracts with themselves to self-perform work:**

- Before this trend of CM/GC's performing self-performed work on a lump sum basis, the more typical scenario was for the CM/GC to estimate a budget for such work as part of their overall GMP estimate and if there were any savings under their GMP estimate, the savings would revert 100% to the Owner or the savings would be shared for example 75% to the Owner and 25% saving incentive bonus to the CM/GC.
- A variation of the actual cost of self-performed work within an overall GMP contract price was to establish a mini-GMP for the self-performed work. In those cases, where the CM/GC was self-performing the work against a mini-GMP for the scope of the self-performed work (in lieu of having the work performed by a subcontractor), some Owner's allowed the CM/GC a self-performed work fee (such as 5% or 10%).

Owners should consider the possibilities of potential manipulation of the competitive bidding process involving self-performed work such as the following:

- Minimizing effective competition by (1) limiting the potential bidders by limiting lead time to bid, (2) only obtaining bids from contractors who are not really interested in doing the work (resulting in high "complementary bids"), (3) obtaining bids from interested subcontractors, then manipulating the scope analysis and subsequent buy-out to award themselves the subcontract even though they were not the apparent low bidder.
- Entering into a subcontract for self-performed work (with effective competition), then without any further competition doubling or tripling the self-performed subcontract amount by awarding themselves change orders to add scope.



Consider the following example of a "competitively bid" subcontract that one CM/GC awarded themselves on a \$70 million GMP project.

- The CM/GC was the apparent low bidder to perform the structural concrete work. They entered into a lump sum subcontract with themselves for the "low bid amount" of \$3.3 million. (Note: Most Owners believe that a 10% FEE margin on self-performed work is reasonable. Therefore, their reasonable estimate of actual costs to be incurred would be \$3 million and the GM/GC would then receive \$300,000 as their FEE for performing the self-performed work.)
- However, in this real life self-performed work example, the GM/GC only incurred actual costs totaling \$2 million resulting in an effective FEE of \$1.3 million or an effective FEE that was more than 50% of their actual cost.
- Approximately \$300,000 of the "more than normal" profit margin in this self-performed work example was due to the CM/GC performing general conditions work related to the concrete self-performed contract work from the main job site office and charging the main project general conditions costs with the concrete related general conditions, personnel and expenses.
- The remaining \$700,000 of the "more than normal" profit margin in this self-performed work example can be attributed to other factors such as "ineffective results" of the competitive bidding, etc.



...the CM/GC's GMP amount for self-performed work subcontracts should be based on their competitive bid amount.

- In the above example, the Owner would have been better served by allowing the CM/GC to perform the work under a mini-GMP subcontract arrangement for the self-performed concrete work. If the mini-GMP subcontract for self-performed concrete had been to reimburse for actual cost plus 10% not to exceed the \$3.3 million bid, the Owner would have only have had to pay \$2 million in cost plus 10% FEE on the self-performed work or a total of \$2.2 million rather than the \$3.3 million they paid.
- The prime contract in the above example contained a right to audit clause which allowed the Owner to audit the records of all subcontracts including the records of the self-performed concrete work. However, the right to audit did not directly benefit the Owner on this project because the contract was a lump sum rather than a mini-GMP. The key cost control point to prevent this potential problem is to make it clear up-front to the CM/GC... while subcontracts for self-performed work will be allowed, they will only be allowed under cost plus % FEE mini-GMP subcontract arrangements.

We believe that the fiduciary responsibility of the CM/GC and the related partnership between the Owner and the CM/GC works fairly to both parties in most contract situations. Therefore, most CM/GC's are probably not benefiting from their self-performed lump sum subcontracts to the extent that was outlined in the above example. However, this is a situation where the best practice for the Owner would be to protect themselves from a scenario where for some unwarranted reason there is a potential for unreasonable profit margins to be unfairly realized by a CM/GC on lump sum self-performed work subcontracts.

We have been recommending that Owner organizations adopt procurement policies which address this issue and make it their organization's formal written policy that any self-performed work by CM/GC's be done on cost plus FEE with GMP subcontracts with no exceptions. Competitive bidding can still be used, but the CM/GC's GMP amount for self-performed work subcontracts should be based on their competitive bid amount.

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## Use Caution Before Converting GMP Contracts to Lump Sum Contracts



In many situations, there are advantages for Owners and CM/GC's to hire key subcontractors based on qualifications rather than on traditional competitive bidding. For example, many Owner's and CM/GC's enter into negotiated "design assist" agreements with major subcontractors such as mechanical, electrical or window wall subcontractors. These contract arrangements often involve "design assist" services which allow the subcontractor to be part of the "team" during the design stage of the project before the plans and specifications are finalized.

Since the plans and specs are not finalized when these "partner" subcontractors are initially hired, the parties usually agree to "negotiate" a guaranteed maximum price after the plans and specifications are finalized.

(Note: The fee percentages for home office overhead and profit are usually pre-agreed upon when the design assist agreements are initially entered into.)



Before converting your Cost Plus Fee with Guaranteed Maximum Price (GMP) contracts or subcontracts to Lump Sum, you should consider the potential economic downside of such conversions...

With a negotiated cost plus fee with a GMP type contract, the advantage to an Owner is that any savings under the agreed upon guaranteed maximum price accrues to CM/GC and then to the Owner. (In some cases, the contracts will provide for sharing the savings with the subcontractor as an incentive to control costs. For example, the Owner may agree to pay the subcontractor a savings bonus equal to 25% of the cost savings realized up to a maximum of 1% of the GMP.)

Rather than leave these subcontracts as cost plus fee with GMP contracts, some Owners and CM/GC's have elected to "convert" their negotiated cost plus fee with GMP subcontracts to fixed price

subcontracts where all savings would accrue to the subcontractor in the same manner as a competitively bid fixed price subcontract.

In some cases the subcontractors offer the CM/GC a "contract price reduction" as an incentive to convert the GMP contract to the fixed price contract. For example, they may offer a discount of ½% or 1% or even 2% off of their proposed contract GMP. Or they may say that they will reduce their proposed contract price by the amount of cost accounting that they will be able to eliminate since they won't have to prepare monthly cost supported payment applications. They may also indicate that the Owner can also save the cost of auditing their cost records at the end of the job.

In one \$50 million subcontract contract example, by not converting to lump sum, the Owner realized an additional \$4 million in savings over the \$1 million in savings offered



Before Owners agree to these types of GMP conversions to fixed price contracts, we recommend they consider the following examples:

1. On one \$50 million cost plus 7.5% fee GMP subcontract, the CM/GC and their cost estimating consultants indicated that they had thoroughly reviewed the subcontractor's proposed GMP price and they were satisfied that the price was fair and they recommended that the Owner "convert" the subcontract to a fixed price subcontract for the proposed \$50 million. The Owner had the subcontractor's price proposal independently reviewed by their own cost control consultants who raised several questions about the pricing which resulted in the subcontractor agreeing to reduce their proposed price to a fixed price contract of \$49 million. (This would have resulted in an immediate cost savings of \$1 million or 2% of the previously proposed contract price). However, the Owner's construction cost control consultants recommended that they leave the contract a cost plus fee with a GMP type contract and perform a cost verification audit at the end of the project. When the project was finished and the subcontractor's costs were audited the actual reimbursable cost plus agreed upon fee amounted to only \$45 million resulting in a \$5 million savings accruing to the Owner rather than the previously offered \$1 million savings that the Owner would have realized if they had converted the GMP contract to a fixed price contract. (Note: The Owner's cost to perform the final close-out audit of this subcontract was approximately \$50,000.)



“Negotiated GMP contracts often have significant opportunities for savings to be achieved due to the non-competitive nature of the original GMP pricing.”

2. On a non-competitively bid \$4 million cost plus 15% fee with a GMP subcontract, the CM/GC let the subcontractor bill the Owner as though the contract was a fixed price subcontract. When the Owner conducted their contract close-out audit of the CM/GC's records they discovered that this subcontract was a cost plus fee contract rather than a fixed price contract. Therefore, the Owner requested the CM/GC to have the subcontractor prepare their final accounting of their cost plus fee which would then be audited. The subcontractor then submitted a final cost accounting of their cost plus fee which according to the subcontractor amounted to only \$3.5 million rather than the \$4 million which they have previously billed. The Owner's audit review of the subcontractor's final accounting and related records revealed that the subcontractor's final accounting included approximately \$500,000 in questioned costs plus fee. The final agreed upon cost savings to the Owner amounted to \$750,000 after all of the questioned cost issues were negotiated. (Note: The Owner's cost to perform the final close-out audit for this subcontract was approximately \$15,000.)

In both of the above case examples, the Owner would have missed the opportunity to realize significant savings if they had converted these subcontracts to lump sum rather than leave them as auditable cost plus fee with GMP type contracts. Negotiated GMP contracts often have significant opportunities for savings to be achieved due to the non-competitive nature of the original GMP pricing. When early conversions to lump sum contracts are contemplated, it is difficult for the Owner to realize the maximum potential savings due to the remaining unknowns at the time of the conversion.



# The Reasons for Auditing Lump Sum Construction Contracts

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It happened again... I was teaching *Fraud Awareness for Managers* when a project control specialist with estimating and control responsibilities for \$2 billion of construction projects said “We don’t include right to audit provisions in our lump sum or fixed price contracts...” During a break he confirmed with his colleagues in supply chain management that he was correct. He seemed surprised that I was suggesting including right to audit provisions in all types of contracts. He asked, “What would be the purpose?”

It is common to get this response when we mention auditing lump sum construction contracts. Many owners believe that using a fixed price or lump sum contract eliminates certain risks related to overcharge. While certain risks are mitigated by using lump sum contracts, be assured that the contractors, subcontractors, suppliers, and their employees know the opportunities presented by each type of contract, and some may knowingly or inadvertently take advantage of these. In today’s world of limited resources and outsourcing, inspections and monitoring may not be sufficient to discourage or detect some undesirable practices. In addition, some construction is done in remote locations or isolated sites making meaningful full-time inspection and monitoring difficult.

The following risks associated with lump sum contracts may be mitigated by an audit of the records of contractors, subcontractors or suppliers.

1. The contractor<sup>1</sup> can make extra profit by shorting on delivery. *Auditing the contractor’s records may allow an owner’s representative to determine quantities actually delivered.*
2. The contractor can make extra profit by substituting other materials. *Auditing the contractor’s records may allow an owner’s representative to determine what was actually delivered.*
3. The contractor may discourage rigorous scrutiny by providing gifts and entertainment in excess of what the owner defines as appropriate. *Auditing contractor’s records may disclose excessive or inappropriate entertainment.*
4. The contractor may pay kickbacks to owner’s representatives. *Auditing contractor’s records may reveal cash kickbacks, building out of the job, or no show employees.*
5. The contractor may over bill, knowing their “partner” is approving the work or the billing. *Auditing the contractor’s records may reveal over billing not discernable in owner’s records.*
6. The contractor may require kickbacks from some subcontractors or suppliers. *Auditing contractor and subcontractor’s records may reveal kickbacks and related over billings to generate funds for the kickback.*
7. The contractor can inflate costs associated with change orders. *Auditing contractor’s records may reveal undisclosed rebates or discounts and markups on subcontracts and materials in excess of contract provisions.*

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<sup>1</sup> Rather than the contractor, the problems may originate with their employees, a subcontractor or materials supplier.

Although some of these risks may be avoided by rigorous monitoring, many owners lack the resources to effectively monitor their projects. Some of the exposures may involve compromise or nonperformance by those in oversight roles. Such exposures may be more readily identified by vendor audit.

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The real key for the owner is to assure that the job is performed properly, with the right materials installed in the right way, and the billing is correct. For each of these the owner needs representatives seeking answers to “*How do we know?*”

Owners probably do not want to invest in auditing every lump sum contract. So where should owners direct their attention? I believe that a good place to start would be:

- High dollar projects
- Projects with cost overruns
- Projects with the most change orders or change order dollars
- Projects awash in rumor
- Anything strange, odd & curious

Only the first of the above is known in advance of the project. For the others, the decision to audit may come after the project is underway, long after the contract is signed. The time to include a right to audit provision in contracts is before the contract is signed. The right to audit will then be available should the owner want to exercise it.

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**We would like your comments.**

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## **LUMP SUM EXERCISE**

**Would the exposures below be detected in your organization?**

1. Work performed included less material (for example, concrete or steel) than the contract required.
2. The contractor substituted lower grade steel than called for in the contract.
3. A subcontractor did the work with the right materials, but used the wrong method.
4. The contractor provided excessive and inappropriate entertainment. Those entertained provided oversight and inspection, and overlooked overcharges and non performance.
5. Contractors paid kickbacks by including in the job cost a) building or remodeling homes of executives, and b) payments to management or their relatives for which no work was performed.
6. The contractor billed for work in the base contract as extra, counting on his “partner” in the owner organization to approve it.
7. The contractor required subcontractors and suppliers to kick back 10%, and allowed the subcontractors to over bill to generate funds for the kickback.
8. A contractor received a 20% volume rebate and failed to reflect the rebate in pricing a change order as required by the contract.

**If you believe these would be discovered...  
HOW would they be discovered?**

# Construction Audit and Cost Control Institute

**Is construction-related fraud inevitable? Kickbacks and corruption, price fixing and bid rigging, overcharge and non-performance combine to drive up construction costs for owners.**

## Don't Be a Target of Opportunity: 12 Steps for Reducing Exposure to Construction Fraud

What role can auditors and other finance professionals play in making it more difficult for fraud to occur and go undetected? Here are some practical steps finance professionals can take to help defend against construction-related fraud:

- 1. Know your projects** - *the capital expenditures, the types of projects and contracts, the status and how capital expenditures are recorded in books and records.*



**“...overcharge and non-performance combine to drive up construction costs for owners.”**

**2. Know your vendors** – *who are the contractors and subcontractors and major suppliers. Know their ownership, performance history, prior problems including litigation, fines and settlements. Know your organization’s prior experience.*

**3. Know the frauds associated with your types of projects** – *gain insight from your own experiences and the experiences of others. Research construction-related fraud.*



**4. Understand the culture for your projects** - *the location and industry practices. Understand gifts and entertainment rules and practices. Understand the relationships and political connections.*

**5. Understand your contract management environment** – *Know who manages and controls the projects and how your management interacts with contractors, subcontractors and suppliers.*



- 6. Learn recent construction experiences** – *Identify overruns and failed projects, delays and litigation. Determine what the grapevine has to say about project management.*
- 7. Learn how work is monitored** – *Identify construction errors and how often monitoring has resulted in rework, or corrections, credits from contractors or contractors being debarred.*
- 8. Determine administrative procedures and how they are applied** - *for bidding and awarding work, pay requests, change orders. Identify exceptions, protests, change orders and contract claims.*
- 9. Reduce opportunity for fraud to occur and go undetected** - *Harden the target through effective contracting, and monitoring of work and billing, defining, communicating and enforcing travel and entertainment guidelines.*
- 10. Audit books and records of contractor and subcontractors** – *Some fraud is reflected only in the books and records of others. Have right to audit provisions in all contracts. Use them.*
- 11. Drill down into detail** – *Inspections, counts and measurements, lab tests, and review of detail supporting billing provide insight.*
- 12. Effectively respond to indicators of wrongdoing** – *Professional response starts with addressing the indicators and may include a complete investigation. Outcomes may be debarring vendors, referral to law enforcement or regulators, civil suits, and termination of employment. Effective response sends a clear message.*

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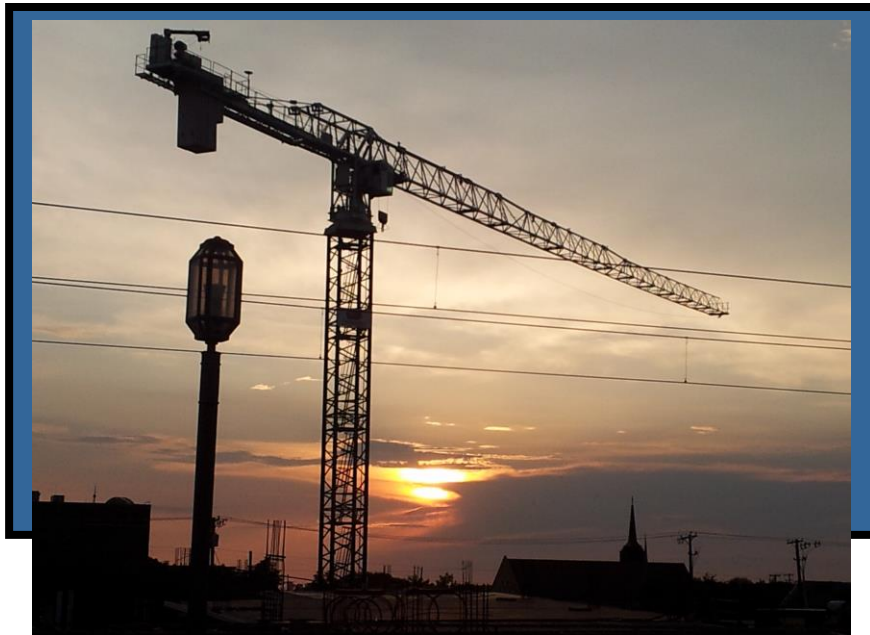
**"SUBGUARD" (or Subcontractor Default Insurance) is an insurance/self-insurance vehicle that has been popular with some major construction management firms/construction general contractors (CM/GCs) throughout the United States.**

A "Subcontractor Default Insurance" program (SUBGUARD) is used by a CM/GC in place having the subcontractors provide conventional performance and payment bonds.

The SUBGUARD insurance programs that we have seen have had a maximum insurance premium plus loss expense to the GM/GC of approximately 1% of the enrolled subcontracts and a minimum expense for pure insurance of approximately .4% or less of the enrolled subcontracts.

## Construction Cost Control and Audit Considerations: SUBGUARD





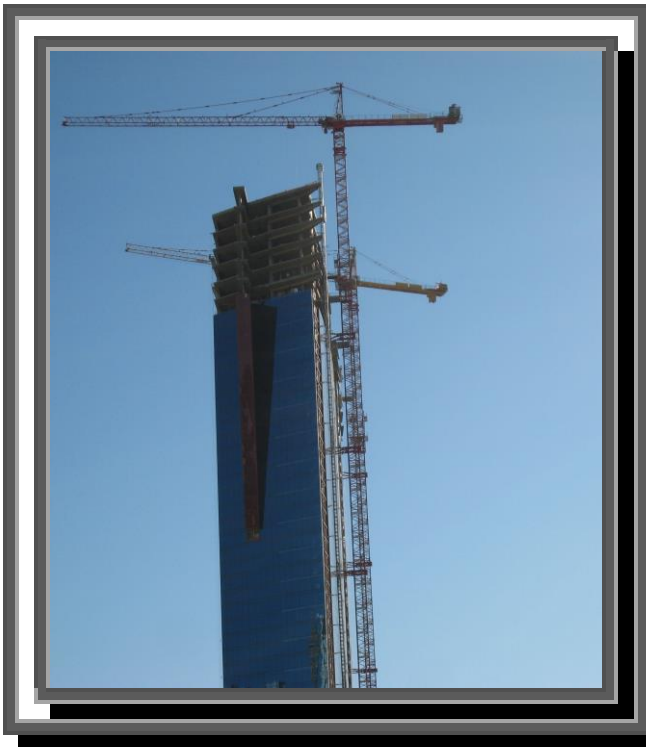
On two recent CM/GC projects (with GMP's greater than \$100 million) that we audited, the CM/GC experienced no substantial claims against the SUBGUARD policy for those projects. This means the CM/GC's total actual out-of-pocket costs for the SUBGUARD program for those projects was less than .5%.

Whenever a CM/GC gets the Owner to agree to pay them a fixed percentage equal to 1% or greater for SUBGUARD, they are building in a potential additional profit opportunity for themselves while covering their maximum premium/loss exposure as a fixed cost that is paid to them by the Owner (i.e. the 1% or greater charge for SUBGUARD).

**“... the CM/GC’s total actual out-of-pocket costs for the SUBGUARD program for those projects was less than .5%.”**

There are **three "best practice"** options that we have seen used by Owners to benefit from the cost minimization upside available through the use of SUBGUARD:

- The Owner and the CM/GC agree that the **Owner will pay for the actual cost of the SUBGUARD premiums and actual losses up to 1%** of the enrolled subcontracts (which is usually the maximum amount payable to the insurance company if the project experiences subcontractor default costs that use the claims reserve)



- The Owner and the CM/GC agree that the Owner will reimburse the up to 1% of the enrolled subcontracts (same as #1 above). However, they **agree to split any actual savings** in the event the actual cost of the pure insurance and actual out-of-pocket costs of subcontractor default is less than the 1% maximum cost.
- The Owner established a pre-bid cost factor such as .6% or .7% of the enrolled subcontracts as **the fixed amount that they will pay for SUBGUARD**. (In effect, this is a pre-agreed upon split of potential savings that may be realized through the use of the SUBGUARD program.)



## Behaviors Can Signal Corruption

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### When should interference be referred for investigation?

It is not unusual for executives and board members to suggest preferred vendors. When a contractor they know has a challenging project, leaders may want to help for the good of the organization. What may be well-intended can be perceived by others as interference in established processes. Interference in soliciting, evaluating and awarding bids, managing projects and resolving contract disputes is common in cases of kickbacks and corruption. One government organization requires referral for investigation any time officials or board members provide such input. The officials and board members are now trained not to interfere. The result – interference is no longer a problem.

### Behaviors to look into...

Owner representatives asking for details and explanations about contracts and billings may encounter obstacles within their own organization. It is not unexpected that busy, well-intended professionals resist intrusions that they consider unnecessary. Sometimes these reactions can be clues, for example:

- *An employee agreeing that the contractor doesn't need to provide information*
- *Siding unreasonably with a contractor when the owner questions costs*
- *Trying to discredit those who ask reasonable questions or ask for reasonable detail*
- *Resorting to personal attacks when faced with requests for information or data*

The above don't necessarily mean fraud, but they do correlate with issues related to loyalty, competence and integrity. Project leaders may be too close to the contractor or may have a vested interest in the contractor getting their way, and thus not protect the owner's interests. Such behaviors may indicate serious problems. They are worth looking into even if there is no corruption.

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### Questions for Executives

#### WHEN would you prefer construction problems be identified:

- **Early, before they get too big?**
- **Later?**
- **When they get too big to be ignored?**

#### HOW would you prefer problems be brought to light:

- **The news media?**
- **Law enforcement seizes records?**
- **Regulators?**
- **When we run out of money?**
- **Your own management?**
- **Your own auditors?**

### Further thoughts

*Construction projects are notorious. The complexity of construction along with confusion and miscommunication contribute to the challenge. Problems range from cost overruns to bad construction. If minimal owners incur slightly higher costs, if problems explode costs can become outrageous and the project itself may be in jeopardy. Owner involvement and constant vigilance are required for success.*

*No executive wants problems. For some, not wanting to have problems becomes not wanting to be told, or not wanting to follow up on indicators of problems. Willful blindness has contributed to escalation. Hesitating to respond to indicators of problems has led to charges of incompetence and allegations of executives actually being involved in wrongdoing.*

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