



# NATIONAL INDIAN GAMING ASSOCIATION

Rebuilding Communities Through Indian Self-Reliance

## ***Construction Services - How to Minimize Risk and Deliver Your Project on Budget***

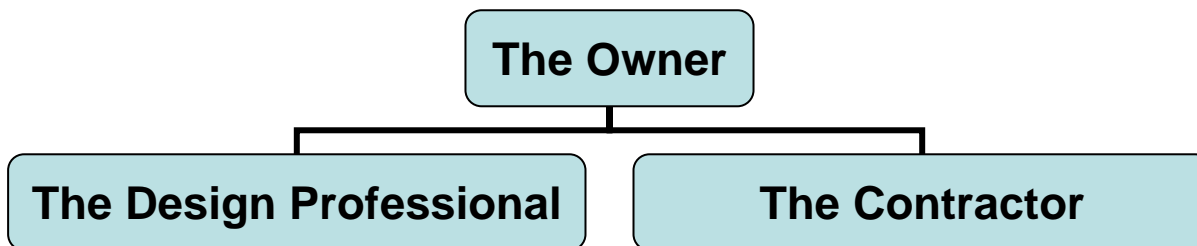
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# Introduction to Construction Process

# Introduction to Construction Process

## The Main Players: Traditional Triangle





# Introducing the Players

## The Owner –

The entity that, typically, provides the site, the design, the organizational process and the money for the project.

- Private Owners

- can select its designer, contractor and contracting system in any manner it chooses;
- Typically, inexperienced in construction process



# Introducing the Players

## The Owner – continued

- Public Owners

- Are limited by statute or regulations as to procurement;
- Use projects to accomplish other goals (affirmative action, support to minority owned business);
- Are likely to be experienced in construction process.



# Introducing the Players

## The Design Professional

The entity that translates the Owner's needs into Builder's requirements

- Often, single discipline firm (i.e. architecture, structural engineering, mechanical, etc.);
- Most often hired by the Owner but expected to make impartial decisions during construction.



# Introducing the Players

## The Contractor

A typical construction company is:

- Local;
- Small to medium sized;
- Family owned with 5 to 10 employees;
- Specialized (2 out of 3 contractors are specialty)



# Introducing the Players

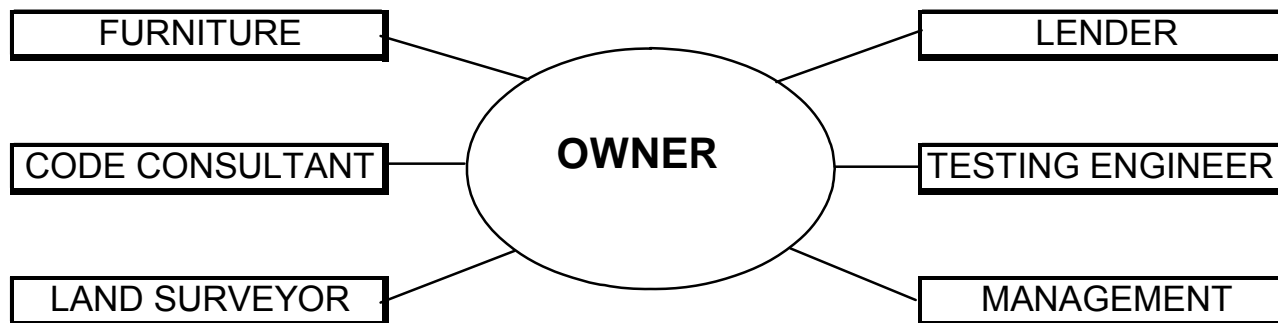
Thus, the role of a General Contractor is to:

- Select a group of specialty contractors to do the job;
- Schedule and coordinate the work;
- Enforce specialty trades compliance with schedule and contract documents;
- Serve as a conduit for the flow of money



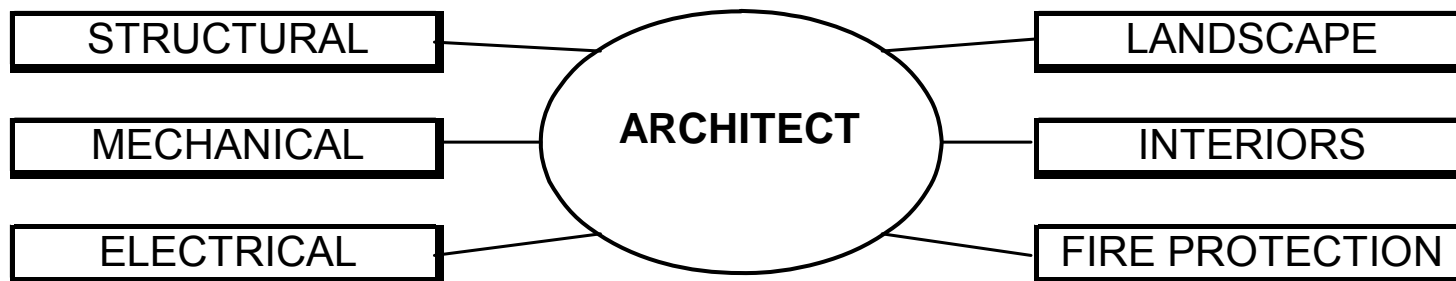
# Introducing the Players

Supporting entities:



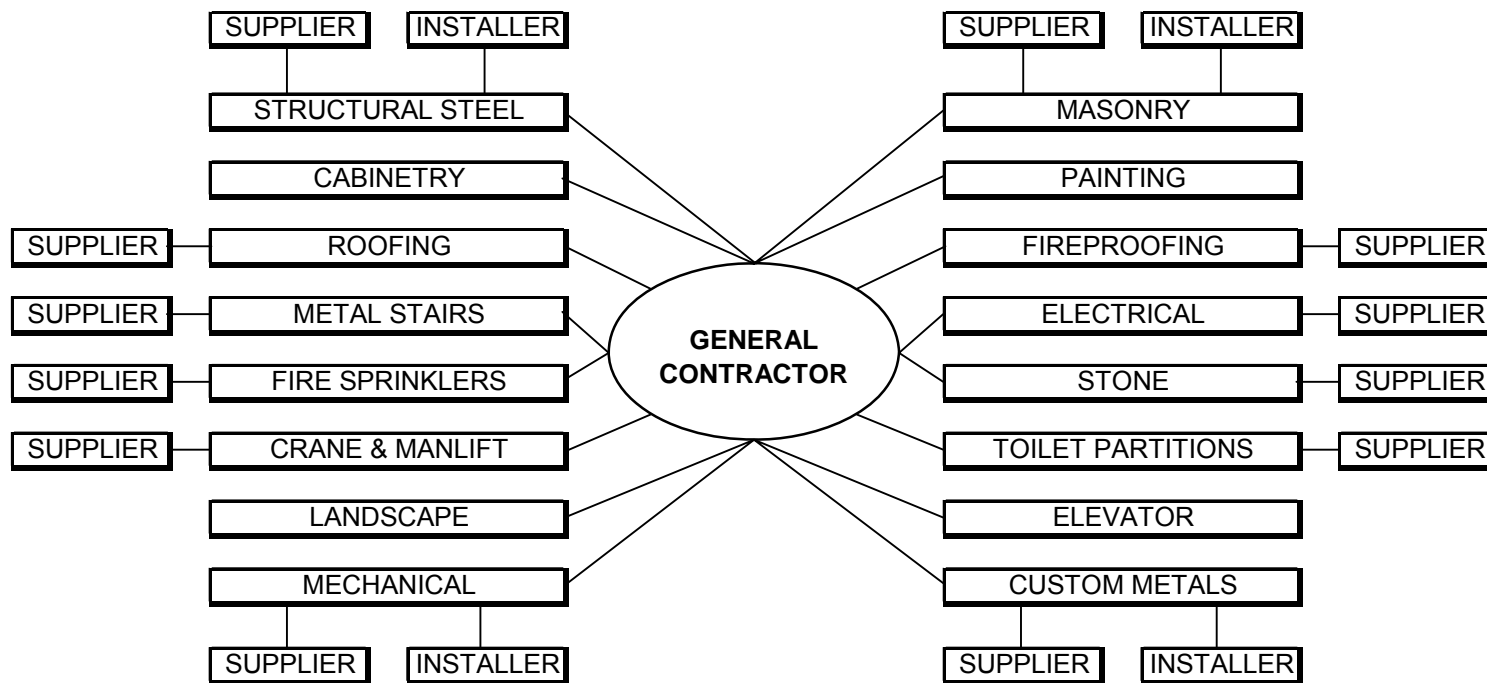
# Introducing the Players

Supporting entities:



# Introducing the Players

Supporting entities:



# The Delivery System

## Traditional Process:

### “Design-Bid-Build”

1. Owner acquires rights to improve land;
2. Owner commissions an architect (or an engineer) to prepare design;
3. Owner engages contractor to execute completed design

# The Delivery System

## “Design-Bid-Build” – Benefits

- Owner receives completed design;
- Ability to choose Fixed Price construction contract;
- Architect as an Owner’s rep in the contract administration phase



# The Delivery System

## “Design-Bid-Build” – Weaknesses

- Time consuming process;
- No contractor’s input during design;
- Architect and Contractor in adversarial position



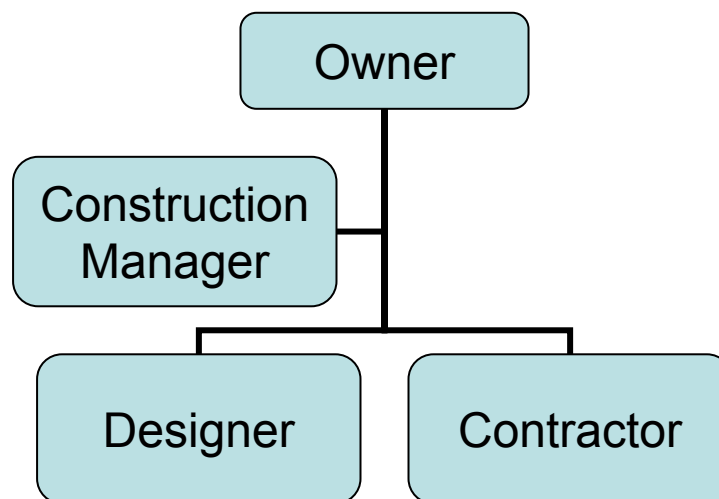
# The Delivery System

## Contemporary Variations: Construction Management

- CM developed out of perceived weaknesses and inefficiencies in the traditional construction process;
- CM objective is to be an efficient tool for obtaining higher quality construction at the lowest possible price and in the quickest possible time

# The Delivery System

## Construction Manager as an Adviser:





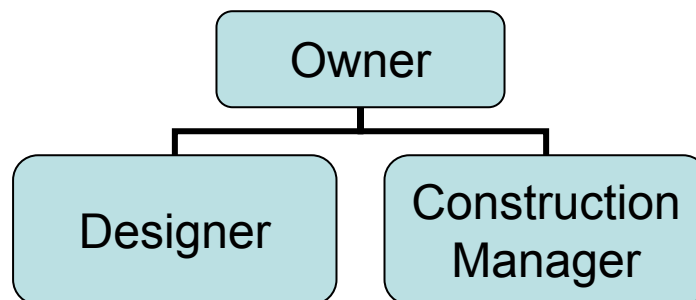
# The Delivery System

## Construction Manager as an Adviser

- Could be part of the designer's organization;
- Often separately retained by the Owner;
- Advises the Owner and the Designer as to design (Value Engineering process);
- Performs many of the construction administration services;
- Directs trade contractors who contract directly with Owner.

# The Delivery System

## Construction Manager as a Contractor:





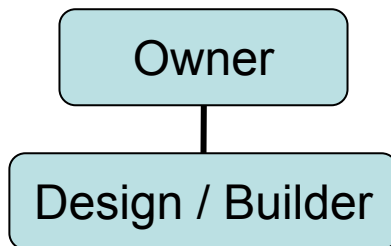
# The Delivery System

## Construction Manager as a Contractor

- Separately retained by the Owner
- Advises the Owner and the Designer as to design (Value Engineering process);
- Subcontracts with specialty trades to do the job;
- Usually offers a guaranteed maximum price (GMP)
- Usually delivers project on a fast track

# The Delivery System

Design Build  
also known as “Turnkey”





# The Delivery System

## Design Build

The entity contracted would, typically, be a construction company with one of the following:

- An in-house architect;
- A subcontracted architect;
- A design firm in a joint venture agreement



# The Delivery System

## Design Build Advantages:

- Speed (fast track);
- One entity replaces several entities;
- Responsibility concentrated within D/B entity



# The Delivery System

## Design Build Weaknesses/Risks

- Absence of an independent design professional;
- Tendency to use open-ended cost contract;
- Lack of independent payment certification process;
- Requires knowledgeable owner



# The Delivery System

Other Players:

Program Management

Program Management services offer assistance in:

- Planning a project or multiple projects;
- Defining project's scope and budget;
- Defining each party's responsibility;
- Selecting construction managers



# The Delivery System

## Owner's Representative

An advisor to the owner who can provide any of the following:

- Constructability reviews
- Contract compliance reviews
- Bids evaluation
- Value engineering
- Project schedule development
- Reporting
- On site inspections
- Quality monitoring
- Change order management
- Payment review and approval
- Punch list process
- Contract close-out



# The Selection Process

## How to choose the Delivery System ?

- Which tasks will be handled in-house and which will be outsourced?
- What experience do team members have?
- What experience does the in-house team possess?
  - Will training or external resources be required?
- Has appropriate person been selected as Owner's team leader?



# Construction Contract Types

Common types of contracts used in engineering and construction industry:

- Lump Sum Contract
- Unit Price Contract
- Cost Plus Contract
- Percentage of Construction Cost Contract



# Construction Contract Types

## Lump Sum Contract:

The engineer and/or contractor agrees to perform specified project for a fixed price.

This type of contract is suitable if the scope and schedule of the project are sufficiently defined

# Construction Contract Types

## Unit Price Contract:

The engineer and/or contractor agrees to perform specified project utilizing agreed upon unit prices

- Unit represents a distinct element of construction and can combine labor and material cost

This type of contract is suitable if the scope and schedule of the project are not sufficiently defined

# Construction Contract Types

## Cost Plus Contracts:

- **Cost + Fixed Fee:**  
Compensation is based on a fixed sum independent of the cost
- **Cost + Fixed Percentage:**  
Compensation is based on a percentage of the cost



# Construction Contract Types

## Cost Plus Contracts:

- **Cost + Fixed Fee with a Guaranteed Maximum Price (GMP):**

Compensation is based on a fixed sum. The total project cost will not exceed an agreed upper limit

# Construction Contract Types

## Cost Plus Contracts:

- **Cost + Fixed Fee with a Guaranteed Maximum Price and a Cost Savings Sharing provision:**

Compensation is based on a fixed sum. The total project cost will not exceed an agreed upper limit. Any cost savings are shared between the Owner and the Contractor.



# Construction Contract Types

## Percentage of Construction Cost Contracts:

Compensation is based on a percentage of a construction costs. Common for engineering contracts.



# The Selection Process

## How to choose the appropriate Contract?

- What delivery system did you choose?
  - Traditional “design-bid-build”?
  - “Fast-tracking” with Construction Manager?
- Consider controls and incentives
- Consider the risks associated with each contract.



# Construction Contracts Risks (from the Owner's perspective)

## Who carries the Financial Risk?

- Lump Sum Contract – Contractor
- Cost Reimbursable Contract - Owner

# Construction Contracts Risks (from the Owner's perspective)

- Lump Sum Contracts
  - Specified quality materials not used;
  - Specified construction method not used;
  - Specified services not provided;
  - Unapproved credit alternates implemented;
  - Contract quantities not installed



# Construction Contracts Risks (from the Owner's perspective)

- Lump Sum Contracts (continued)
  - Allowances not properly adjusted;
  - Required bonds not obtained;
  - Required insurance coverage not obtained;
  - Owner provided items not credited

# Construction Contracts Risks (from the Owner's perspective)

- Cost-Plus or Time and Material Contracts
  - Excess hours charged by reimbursable personnel;
  - Hours charged by non-reimbursable personnel;
  - Billing rates exceeding actual pay rates;

# Construction Contracts Risks (from the Owner's perspective)

- Cost-Plus or T and M Contracts (cont'd)
  - Labor burden factors exceeding actual cost;
  - Charges for materials may be excessive;
  - Charges for subcontracted work may be excessive;
  - Equipment rental charges may be excessive.



# Construction Procurement Fraud Alert



# Procurement Fraud Alert

- Pre-Award Fraud
  - Collusion between Buyer and Contractor;
  - Bid Rigging;
  - MBE misrepresentation;

## Pre-Award Fraud

- Collusion between Buyer and Contractor
  - *Need Recognition* – gratuity of a kickback for recognizing a need for product or service;
  - *Tailored Specifications* – specifications written so that only one contractor can meet them;
  - *Vague Specifications* – provide a contractor an opportunity to claim entitlement to more money



## Pre-Award Fraud

- Bid Rigging – collusion with the Buyer
  - Submission of bids by “dummy” companies;
  - Abuse of sealed bid process:
    - Premature opening
    - Altering of bids
    - Receipt of late bids
  - Unbalanced bidding



## Pre-Award Fraud

- Contractor Bid Rigging
  - Rotational Bidding – contractor conspire to take turns being the low bidder;
  - Complimentary bidding – contractor collude so that “competitors” submit high token bids;
  - Bid Suppression – contractor agree not to bid;
  - Territorial bidding – market division schemes



## Pre-Award Fraud

- MBE Fraud – misrepresentation of minority status
  - Falsified certification
  - “Front” minority/disadvantaged/woman owner



# Construction Financial Administration

# Construction Financial Administration

Before construction begins:

- Execute contracts
  - With General Contractor or Construction Manager;
  - With Owner's representative;
  - With On-site Engineering Testing firm;
  - Others

# Construction Financial Administration

Before construction begins:

- Assign responsibility between own team and consultants;
  - For progress payment processing;
  - For handling inquiries from the field;
  - For scope change decisions;
  - Other duties

# Construction Financial Administration

Before construction begins:

- Collect required Bonds and Certificates of Insurance



# Essential Contractor's Financial Documents

## Bonding:

- Bid Bond
  - guarantees the Owner that the contractor will honor its bid (usually requires before bidding)



# Essential Contractor's Financial Documents

## Bonding:

- Performance Bond
  - guarantees the Owner that the contractor will complete the contract according to its terms including price and time



# Essential Contractor's Financial Documents

## Bonding:

- Payment Bond
  - guarantees that all subcontractors and suppliers receive payment for the products and services provided to the Project



# Construction Financial Administration

## For Fixed Price type contracts

- Easiest to administer financially;
- Billing typically based on percentage of completion
- No back-up cost documentation required

# Fixed Price Contracts

Financial Issues to focus on:

Percentage of completion;

- Beware of front loading;
- Does progress billed matches work observed in the field?
- How are materials billed?



## Fixed Price Contracts

### Financial Issues to focus on:

- Change Orders
  - Verify scope of change order not already in contract;
  - Is it priced according to contract terms?



# Construction Financial Administration

## For Cost Reimbursable type contracts

- More complex to administer;
- Billing is based on actual cost incurred;
- Voluminous back-up documentation required



# Construction Financial Administration

## For Cost Reimbursable type contracts

- Observe and apply contract terms;
- Use RAID methodology;
- Think like an auditor

# Cost Reimbursable Contract's Key Financial Provisions

*based on AIA document A131*

## Article 5.- Compensation for Construction Phase Services

- 5.1 Compensation;
- 5.2 Changes in the Work



# Cost Reimbursable Contract's Key Financial Provisions

## 5.1 Compensation;

- Percentage of actual Cost of the Work;  
or
  - Other provisions;
- Also,
- Explains how Change Orders affect the Fee



# Cost Reimbursable Contract's Key Financial Provisions

## 5.2 Changes in the Work;

- Minor changes within the scope;
- Trade changes – adjustments to cost of work
- Scope changes – adjustments to cost of work and GMAX (if applicable);



# Cost Reimbursable Contract's Key Financial Provisions

## 5.2 Changes in the Work;

- Method of pricing change orders:
  - Unit prices;
  - Labor rates;
  - Negotiated fixed price;
  - Actual cost



# Cost Reimbursable Contract's Key Financial Provisions

## Article 6 Cost of the Work for Construction Phase

- 6.1 Costs to be Reimbursed
- 6.2 Costs not to be Reimbursed

# Cost Reimbursable Contract's Key Financial Provisions

## 6.1 Costs to be Reimbursed

- Field labor
- On site supervision
- Subcontract costs
- Materials and equipment incorporated in construction
- Temporary facilities
- Specified miscellaneous costs

## 6.2 Costs not to be Reimbursed

- Office staff
- Expenses of the principal office
- Overhead and general expenses
- Costs incurred due to negligence
- Capital expenses



# Cost Reimbursable Contract's Key Financial Provisions

## Article 6. Cost of the Work for Construction Phase

- 6.3 Discounts, Rebates and Refunds
- 6.4 Accounting Records



# Cost Reimbursable Contract's Key Financial Provisions

## 6.3 Discounts, Rebates and Refunds

- Who receives cash savings due to prompt payment?
- Who receives cash savings from manufacturer's?
- How are refunds applied?

## 6.4 Accounting Records

A must have provision:

*“The Construction Manager shall keep full and detailed accounts and exercise such controls as may be necessary for proper financial management under this Contract; the accounting and control systems shall be satisfactory to the Owner. The Owner and the Owner’s accountants shall be afforded access to the Construction Manager’s records, books correspondence, instructions, drawings, receipts, subcontracts, purchase orders, vouchers, memoranda and other data relating to this Project, and the Construction Manager shall preserve these for a period of three years after final payment, or for such longer period as may be required by law.”*



# Cost Reimbursable Contract's Key Financial Provisions

## Article 7 Construction Phase Payments

- 7.1 Progress Payments
- 7.2 Final Payment



# Cost Reimbursable Contract's Key Financial Provisions

## 7.1 Progress Payments;

- Submission dates;
- Back-up documentation required
- Cost of Work actually incurred v. Schedule of Values
- Method of calculating fee
- Retainage
- Payments to Subcontractors
- Payments for materials
- Role of Architect



# Cost Reimbursable Contract's Key Financial Provisions

## 7.1 Progress Payments – Suggested back-up documents to review:

- Subcontractor invoices;
- Supplier invoices;
- Foreman's timesheets for crews;
- Equipment rental charges;
- Contractor's internal equipment charge sheets;



# Cost Reimbursable Contract's Key Financial Provisions

## 7.1 Progress Payments – Fee Calculation

Sample formula:

*“Fee for construction services to be computed at 6% of construction cost as defined in par.6, including change orders”*



# Cost Reimbursable Contract's Key Financial Provisions

## 7.1 Progress Payments – Lien Waivers

- Partial Waivers of Lien – A promise, by the contractor, subcontractor or supplier not to place a lien on part of the work for which compensation has been received.
- Trailing lien waivers – the value does not include current pay application



# Progress Payments Review Tips

Apply RAID test to costs submitted:

- R – reimbursable per terms of contract
- A – accurate (quantities expended and priced accurately per contract terms)
- I – incurred (verify if obligation to pay incurred)
- D – documented or recorded



# Progress Payments Review Tips

Complete accounting cycle = cost control:

- Purchase Order
- Delivery ticket
- Invoice
- Payment



# Cost Reimbursable Contract's Key Financial Provisions

## 7.2 Final Payment;

- Contract fully performed?
  - ✓ Punch list
  - ✓ As built drawings
  - ✓ Final project cost accounting
  - ✓ Operation and maintenance manuals
  - ✓ Certification of Warranty
- Final Certificate of Payment

# Auditors' Tips for Contract Financial Administration

## Key words:

- Sampling
- Reconciliation
- Testing
- Tracing
- Confirmation



# Auditors' Tips for Contract Financial Administration

## Sampling:

- Effective when it is impractical to review every transaction
- Methods:
  - Judgemental
  - Random
  - Stratified dollar-unit statistical basis



# Auditors' Tips for Contract Financial Administration

## Reconciliation:

- Matching amounts from invoices to support documentation

# Auditors' Tips for Contract Financial Administration

## Testing:

- In-depth analysis of particular transaction and its components:

### *Example:*

*From hourly charge to supporting payroll data, timesheets records, company's overhead rate calculation, etc.*

# Auditors' Tips for Contract Financial Administration

## Tracing:

- Confirming amounts/quantities agree between documents in the accounting cycle:
  - Purchase Order
  - Delivery ticket
  - Invoice
  - Payment record
  - Cancelled check



# Auditors' Tips for Contract Financial Administration

## Confirmation:

- Confirming audited party's receivables or payables through letters sent directly to creditors or debtors



# Post-Award Fraud Alert



# Post-Award Fraud Alert

## Beware:

- Fraudulent activities easier to implement after contract awarded;



# Post-Award Fraud Alert

## Common Fraud categories:

- Materials substitutions;
- Fraudulent performance bonds
- Fraudulent billings
- False claims and theft



# Post-Award Fraud Alert

## Materials substitutions fraud schemes:

- Delivery of inferior/substandard material;
- Delivery of not tested materials;
- Falsification of test results;
- Delivery of counterfeit products;
- Submission of false certifications
  - Origin
  - Performance
  - New



# Post-Award Fraud Alert

## Fraudulent Performance Bonds:

- Performance bonds typically cost from ½ to 2 percent of contract;
- Recent schemes involve shadow companies issuing worthless bonds



# Post-Award Fraud Alert

## Fraudulent Billings/False Claims:

- Bills or claims for work not performed or materials not used;
- Change Orders;
  - Sometimes used as an opportunity to “get well” on a contract
  - Inflated amount of labor or materials
  - Inflated unit pricing



## Post-Award Fraud Alert

### Ways to prevent change order fraud:

- Start with well defined scope of work;
- Maintain an efficient, timely change order review process;
- Require detailed estimates and approvals prior to allowing the work to proceed
- Negotiate predetermined unit prices
- Conduct periodic random audits

# Post-Award Fraud Alert

Fraudulent claims for fictitious or inflated damages:

- Delays;
- Disruptions;
- Lost Productivity
- Overtime



# Post-Award Fraud Alert

## Ways to deter false claims:

- Start with well defined scope of work;
- Scrutinize all claims before making settlement offers;
- Require contractors to use and regularly update CPM schedules
- Conduct audits of all significant claims
- Bar contractors who have submitted false claims from bidding future projects



# Post-Award Fraud Alert

## Theft

Theft opportunities exist due to

- Vast size and heavy traffic flow on a project;
- Multiple subcontractors' crews;
- Lucrative black market for tools and materials



# Post-Award Fraud Alert

## Ways to deter theft:

- Discourage on site storage of materials;
- Require central storage in a secured location;
- Require workers to wear identification tags;
- Install video cameras in strategic locations;
- Employ security staff;
- Require workers to enter and exit at secured checkpoints



# Project Close-out



## Project Close-out

Congratulations!

You have reached Substantial Completion

- Building is ready for occupancy...

however;

- ...there is a lot to do before Final Completion



## Project Close-out

The term “Project Close-out” encompasses all the activities that need to occur between Substantial completion and Final completion

# Project Close-out

## Key elements:

- Contractor notifies it reached substantial completion;
- Contractor presents list of items still to be completed / corrected – “Punch List”;
- Architect verifies and issues final Punch List;
- Contractor performs corrective work;



## Project Close-out

### Key elements (continued):

- Contractor delivers as built drawings;
- Contractor presents operational and maintenance manuals;
- Contractor delivers Certificate of Warranty Commencement;
- Architect declares Punch List items completed



## Project Close-out

Assign, in the contract, responsibility between Owner and Contractor for:

- Utilities;
- HVAC,
- Maintenance
- Insurance
- Building Security

during close-out period



# Project Close-out

**Congratulations!**

**You have reached Final Completion...**

**...and you can release the Final Payment**

# Project Final Audit

Project reached Final Completion, yet outstanding issues remain:

- Contractor's claim for damages due to delays;
- Uncertainty over shared savings in a GMAX contract;
- Dispute over pricing of Change Orders;
- Other



## Why Audit Construction Contracts?

- A 1999 study by “Internal Auditor” indicated that **most auditors reported finding *significant overcharges* during their audits.**
- 55 percent of auditors found significant overcharges on ***25 to 99 percent of their audits.***
- The error rate on ***construction contracts is found to be higher*** than on other types of audits.

# Audits of Construction Contracts

- Owner's right to Audit spelled out in a contract
  - A well-drafted audit/access to records clause will give the owner a contractual right to have access, without litigation, to all of the contractor's (and subcontractors') records at all stages of construction, including their estimate work-papers, cost records and correspondence with subcontractors.



# Audits of Construction Contracts

- No audit clause in the contract
  - Owners can only get access to a contractor's records after a formal litigation process has been initiated through discovery, a legal process that can be costly and take a significant amount of time.



# Construction Contracts Risks (from the Owner's perspective)

- Lump Sum Contracts
  - Specified quality materials not used;
  - Specified construction method not used;
  - Specified services not provided;
  - Unapproved credit alternates implemented;
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# Construction Contracts Risks (from the Owner's perspective)

- Lump Sum Contracts (continued)
  - Allowances not properly adjusted;
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# Construction Contracts Risks (from the Owner's perspective)

- Cost-Plus or Time and Material Contracts
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- Cost-Plus or T and M Contracts (cont'd)
  - Labor burden factors exceeding actual cost;
  - Charges for materials may be excessive;
  - Charges for subcontracted work may be excessive;
  - Equipment rental charges may be excessive.

# Construction Contracts Risks (from the Owner's perspective)

- Change Orders
  - Change Orders not priced in accordance with Contract;
  - Labor rates exceeding actual pay rates;
  - Labor burden factors exceeding actual cost;
  - Material unit prices used exceeding actual cost;



# Construction Contracts Risks (from the Owner's perspective)

- Change Orders (continued)
  - Quantity estimates not accurate;
  - Labor hours arbitrarily inflated



# Audit v Contract Types

- Lump Sum Contract
  - Scope risk
  - Engineering emphasis in audit
- Cost-Plus Contract
  - Financial risks
  - Accounting emphasis in audit
- Recommended team approach – CPA/PE



# Audit Team

- Auditors
  - Accountants, engineers
- Owner
  - Project Management
  - Finance, internal audit
- Contractor
  - Project Management
  - Project Controls, accounting



# Audit Approach

- Audit performed primarily on location:
  - At Owner's headquarters
  - At Contractor's trailer
- Audit performed:
  - Continuously (every pay request)
  - Ad hoc
  - At project closeout



# Audit – Contractor's Records

## Documents deemed relevant:

- Progress billings;
- Project cost reports;
- Invoices;
- Bids and/or estimates;
- Invoices
- General ledger;
- Canceled checks;
- Project logs;
- Purchase orders;
- Time sheets;
- Change Orders;
- Project correspondence;
- Progress reports;
- Project schedules;
- Payroll records;
- Shipping documents;
- Meeting minutes;
- Project profit and loss statement



# Challenging/Reviewing Cost Claims

- Contractors' claims at the end of the project often represent unsettled issues resulting from:
  - Owner caused delays;
  - Other trades caused delays;
  - Lost productivity;
  - Differing site conditions;
  - Other

# Challenging/Reviewing Cost Claims

- A claim submittal clause can formally specify the format, content, and level of back-up documentation that the contractor's claim must contain. If the contractor does not comply with these requirements, the owner has a right to reject the claim until it meets the contract requirements.



# Challenging/Reviewing Cost Claims

- Contractor claims can misrepresent actual situation due to:
  - Ignorance (knowledge errors)
  - Carelessness (performance errors)
  - Negligence (performance errors)
  - Greed (intent errors)



# Challenging/Reviewing Cost Claims

- Contractor should be prepared to offer detailed and specific backup documentation to support its claim;
- When the claim hits the litigation path, be aware that all contractor's records are open to scrutiny during discovery period.



# Types of Claims

- Delay
- Acceleration
- Changed or Differing Site Conditions
- Defective Plans or Specs
- Disruption
- Extra Work
- Deletions of Work



# Potential Damages

- Lost Productivity/Added Labor
- Overtime Premiums
- Wage Escalation
- Excess Material & Equipment
- Price Escalation



# Potential Damages

- Extended Project Management
- Extended Jobsite Overhead
- Extended Warranty
- Extended/Unabsorbed Overhead
- Interest