Managing Weapons of Mass Destruction

*General Conditions* and *Change Orders*
Project Executive and Advisor

RELEVANT EXPERIENCE

• 33 years of construction management experience in local, regional and national design and construction markets.
• Sr. Project Management and Executive level expertise has contributed to managing, shaping and placement of over $1 Billion of construction.
• $Billion Dollar Impact Program – Inaugural Year 2012
  • St. Louis Minority Supplier Development Council – BJC HealthCare
• National Association of Construction Auditors

SERVICE EXPERTISE

• Integrated Project Delivery (IPD)
• Design-Build-Bridging (DBB)
• Development of PMP (Project Management Plan)
• Analysis - Speed to Market Strategies
• Determination/Evaluation of Project Delivery Method
• Project Incentives vs. Penalties
• Evaluation of Project Insurance
• Construction Audit Program
• Strategies for Phased Delivery and Turn-over
• Managing Jurisdictional Issues
• PLA - Project Labor Agreement Review
• Budget, Analysis and Cost Controls (Pre-GMP, GMP, IGMP/OGMP)
• Pre/Post-Bid Process Management
• Delay Claim Analysis
• Non-Compliance Analysis – Remedy
• Cost Avoidance vs. Recovery
Presentation Agenda

1. Statistical Data
2. Attributes of a Successful Project
3. General Conditions *(General Discussion)*
4. Change Orders *(General Discussion)*

St. Louis Cardinals New Ballpark
St. Louis NFL Riverfront Stadium
Miami Dolphins Sun Life Stadium
Is your project successful? How do you know?

- # of Project Change Orders, Delays Claims and Disputes among team members

- Change Order \textit{“Reason Code”} designations?
  a) Design Errors & Omissions
  b) Construction Errors & CM/Subcontractor Scope Gaps
  c) Owner Changes & Program Adds
  d) Unforeseen Conditions

- Key Project Impacts:
  a) Missed milestones for Design deliverables (by-phase)
  b) Construction scope gaps as a result of Authorities Having Jurisdiction
  c) Early turn-over areas and Phasing
  d) Inability to achieve “Substantial Completion” – Missed dates, Architect & AHJ approvals/sign-offs
Attributes of Project Success

Issues that impact project outcomes:

- Incomplete design – placement of work with incomplete design documents
- AHJ Authorities Having Jurisdiction requirements and other code issues
- Project scope crepe
- Weather and other incidents that impact the project critical path
- Varying site conditions and conflicts between field conditions and the documents
- Acts of God, etc.
- Extended closeout process that never seems to end. Clean-up of lower tier disputes, claims and liens, etc. Outstanding cost for work not authorized or approved by the Owner.
- Contractor(s) ECAC Estimated Cost at Completion is higher than the GMP
Statistical Data Sources

- World Economic Forum
- KPMG
- Navigant Construction Forum
- Construction Productivity Blog
- PMI Project Management Institute
Statistical Data Sources

- KPMG
- PMI Project Management Institute

Global Industry Research and Statistical Leaders
69% of all projects failed to meet performance objectives or deemed a complete failure in whole or in part.
Mitigating the potential for *Project Failure*:

Although the engineering and construction industry has made great strides in managing risk, 77% of respondents report underperforming projects, due primarily to *Delays*, *Poor Estimating* and *Failed Communication* processes.

Source: KPMG International Global Construction Survey 2018
Mitigating the potential for *Project Failure*:

- Project Management Institute (PMI’s) - *Pulse of the Profession TM In-Depth Report: The Essential Role of Communication* reveals, globally and across industries, that only 1 in 4 design and construction professionals can be described as a *Highly Effective Communicator*.

- 3 out every 4 (or 75%) of design and construction professionals are considered less than effective communicators.

- **Communication** - Despite the risks, many construction companies admit that they are currently not placing adequate importance on effectively communicating critical project information.

As a result, projects are failing with seeming regularity across the board: On average, nearly 1 out of every 3 projects in the US fail to meet its original project objectives.
About 67% of study respondents feel that weak procurement planning and frequent project design changes have a huge adverse impact on project cost and schedule delays.

These specific types of project impacts, are a typical result of ineffective project planning, design and project management. KPMG survey respondents agreed that these issues have a high impact on project cost. Such impacts can be largely mitigated by effective training and coaching of project managers.

As much as $4.2 billion a year in the U.S. is cost of construction rework caused by poor design and project management performance
The United States faces a rising danger from terrorists and rogue states seeking to use weapons of mass destruction.

A destructive device, such as an explosive or incendiary element, rocket, grenade, biological agent or toxin, that is designed to cause death or serious injury through toxic or poisonous chemicals.
Managing Weapons of Mass Destruction

As defined by the Department of Homeland Security, a weapon of mass destruction is a nuclear, radiological, chemical, biological, or other device that is intended to harm large numbers of people.

The FBI's National Security Branch leads the US Government’s effort to mitigate threats from these weapons.

WMD Basic Programs

The FBI provides leadership and expertise to domestic and foreign law enforcement, academia, and industry partners on WMD issues. The FBI approaches these WMD issues through 4 major areas:

- Preparedness
- Countermeasures
- Investigations/operations
- Intelligence.
**Industry Trends:** Over the last decade or so, Owners have become more educated consumers of design and construction services. Internalizing certain functions as design management, project management, financial controls and construction auditing are just a few methods Owners have used to increase management effectiveness and reduce the cost of capital project expenditures.

**Managing Project Risk:** Effective control of cost, schedule and scope requires elevated levels of project management leadership and demonstrated performance along with the ability to measure and capture the metrics. Predicting successful project outcomes can be driven by your ability to:

1. **Provide clear project scope, define cost of the work – Prevent creeping of the scope**
2. **Process for controlling Change Orders**
3. **Controls for impacts that cause Project Delays**
Managing Weapons of Mass Destruction

Key Project Risk

General Conditions

Change Orders

The design and construction industry continues to face a rising risk (danger) from a construction environment that prides itself in its ability to manipulate Owners, who are exposed as a result of a lack of sophistication with respect to project management and controls.
Several industry practices (Contractor Bad-Behaviors) seek to target Owner building programs, regardless of size, complexity and/or delivery method. Such practices seek to prey on processes and Owner teams without demonstrated experience to effectively protect the interest of the project.

The design & construction industry boast its own version of WMD’s (Weapons of Mass Destruction) that (1) Threaten Owner’s project risk, (2) Adversely impact cost of work and (3) Increase the contractor’s ability to elevate profits. These WMD’s have very real and intended consequences to a large % of industry projects.

As advisors and consultants, we work every day to improve project outcomes for our Clients. We work to prevent these industry WMD’s from being used to cause undue harm to Our Clients and their building programs.
Managing Weapons of Mass Destruction
Key Project Risk

- **General Conditions** – Cost associated with supporting direct project costs and scope. General Conditions include costs incurred at the jobsite. Such GC cost may not necessarily be ascribable to a specific sub scope activity.

- **Change Order** - A Change Order is document that adds/deducts work from the original scope of work of a contract, however, depending on the magnitude of the change, it may or may not alter the original contract amount and/or completion date.
Managing Weapons of Mass Destruction
Defensive Positioning and Counter Measures

The design and construction industry (Owner Reps) should approach and defend industry WMD’s through:

- **Preparedness**
  - Planning
  - Effective preconstruction and design

- **Countermeasures**
  - Transparency and Open-Book Reporting
  - Attention to detail

- **Investigations/operations**
  - Construction Audit
  - Cost Segregation

- **Intelligence.**
  - Demonstrated experience
  - Technical aptitude
  - Communication
  - Lessons Learned
GENERAL CONDITIONS (GC’S):

Project support cost and services not generally included in the subcontracted work packages. GC cost are primarily driven by schedule and complexity.

- The General Conditions are the backbone of the construction contract
- GC’s support all subcontractor scope of work packages
- Key management resource
Construction Support Activities:

General conditions cost typically include:

- jobsite trailer
- jobsite utilities
- small tool charges
- superintendent salaries/costs
- safety costs
- site administrative costs
- project accounting
- field computer and BIM services
- barricades/Shoring
- erosion control
- project management
- dumpster
- clean-up
- job signs
- photographs
- site security
- webpage and web camera
- CPM scheduling
- mobilization
- street cleaning; and
- temporary toilet/water
- material lifts
• Industry cost for general conditions average 6%-12% - Cost of Work.

• Never calculate general conditions cost just based on a % average

• General Conditions may vary in cost based on:

  ➢ Length of Time
  ➢ Project Complexity (high rise, over body of water, deep underground, shoring elements, elevated safety requirements, etc.
  ➢ Winterization periods
  ➢ Special phasing requiring de-mobilization and remobilization
  ➢ Special support for concrete pours, grade level and elevated slabs
  ➢ Approved conditions for off-site pre-fab assemblies, handling, special rigging and equipment installations
General conditions represent cost for those items that are not typically included in the subcontractors cost of work. Contractors and CM’s are entitled to be compensated for all approved general conditions cost.

- **Lump Sum Structure**

- **Cost Reimbursable Basis**
LUMP SUM - (Who Benefits?)

The main benefit and objective to lump-sum general conditions is simplicity. The parties do not typically track, maintain, present or dispute individual general conditions costs during the work progression and final payment processes or in the changes and claims process.

Lump Sum Cost without back-up, Certification or Justification will lead to irregularities, mistakes and ultimately “FRAUD”
LUMP SUM (LS) – Risk to Owners

The primary risk of a lump-sum general conditions strategy is **TRANSPARANCY**.

In many LS scenarios, proper controls are sacrificed in favor of *perceived efficiency*, *reduction of administrative burden* and *ease of closeout*. In trading precise controls and certainty for time savings, the Owner bears significant risks.

Attention must be paid to the designated costs included in the lump-sum definition. Some variable costs, which are not certain to occur, should be tracked expressly from fixed cost, definition and handled in controlled manner.

*Winter conditions, insurance deductibles, man & material hoist, tool storage and office trailers* are often dependent on time variables and should be excluded from the LS definition. These costs should be carried as separate cost items or handled through allowances, approved, tracked and reported as actual cost.

I suggest listing the types of costs specifically included in the lump sum so that disputes about unlisted costs can be avoided.
Cost Reimbursable Basis - (Who Benefits?)

GC’s delivered on a cost reimbursement basis is defined as an agreement for cost and the contractor is reimbursed for all of its allowed expenses, plus an additional fee (Otherwise known as “Profit”)

To the contractor, a CR model is most appropriate when it is desirable to shift some risk of unsuccessful performance from the contractor to the Owner. It is most commonly used when the scope of work associated with the GC’s cannot be explicitly defined.

General Conditions on a Cost Reimbursement basis provides no incentive for the contractor to be a good manager of scope and/or cost. In fact, there can be adverse incentives for the contractor to increase cost to elevate fees.
COST REIMBURSABLES (CR) – Risk to Owners

• The primary risk of a Cost Reimbursable general conditions strategy is **TRANSPARANCY**.

• Agreeing to GC cost, regardless of delivery method when the project scope is not well defined or incomplete.

• A major disadvantage of the CR method of delivering GC’s is the risk for paying more cost than expected in an effort for the contractor to increase fees. The contractor also has less incentive to be efficient since he will profit either way. Additional administration and oversight are needed to ensure that the contractor adheres to cost controls, documentation, protocols for use of allowances and approved cost-report formatting.

• When using the CR method for GC’s, it is prudent to establish “Rules of Order” all costs including provisions monthly pay app back-up data requirements simply what is allowable and non-allowable cost.
Looking at the wording...“General Conditions” relate to legal conditions, time allocations, support level resources and, whereas “General Requirements” relate to specifications rules, requirements, instructions related to the quality control methods, performance of work and overall division of responsibilities pursuant to the contract documents.

“General Requirements” include certain legal provisions, surety, specific provisions related to the rights and responsibilities of participating parties involved. These requirements are typically found in the Division 1 General Requirements Sections – 010000 - 017823 of the Contract Documents Technical Specifications.

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</tr>
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<td>Closeout Submittals</td>
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**Reiterate** - General conditions costs are related to the actual work placed for the project and should not represent a way for the Contract(s) to recover costs associated with poor workmanship or scope gaps.

In a transparent environment, general conditions cost require the submittal of back-up data to demonstrate evidence of designated incurred cost.

- On-site Employee/management bonuses and special perks
- Equipment and tools can be double accrued in both subcontractor scope activities and GC’s
- Accounting, reporting and reconciliations
- GC’s billed for overtime wages never worked by trades and management
- Deductive CO credit for GC’s for project scope reduction and/or reduced schedule
- Do you allow for staff/management mileage reimbursements? Cell phones, retention bonuses, laptops, software, training, etc.
- Costs of rentals and equipment need to be at rates consistent with industry standards, logged with back-up of purchase orders, monthly rental data up to 80% of value.
FIXED COST AND VARIABLE COST GENERAL CONDITIONS

General Conditions costs typically show-up as **FIXED** or **VARIABLE** costs.

**FIXED COST:**
Fixed costs, such as job signage, mobilization, furniture, etc. as cost that do not change with changes in job scope or duration.

**VARIABLE COST:**
Variable general conditions costs vary when the job duration or value of construction changes. This includes scope *escalation* or *reduction* - Staffing, management, job trailer rental, management cost, periodic cleaning, final cleaning, safety controls, etc.
TRANSPARANCY IN REPORTING

• The contractor must track all general conditions costs and present supporting documentation, (Including all Conditional and Partial Lien Releases) to the Owner with its monthly and final pay applications.

• This practice of requiring justification of all general conditions costs will result in:

  (1) \textit{Higher levels of project cost accountability}

  (2) \textit{Avoidance of non-allowable cost}

  (3) \textit{Reduction and/or elimination of the arduous process of recovering non-allowable (cost) at the end of the project.}

  (4) \textit{Reducing cost disputes between Owner and Contractor}
GENERAL CONDITIONS – ARE THEY AUDITABLE?

1. Protect your project through transparency. Take the time, energy and resources to know what you are buying and track the cost. Strategy - Avoid the cost on the front end, rather than engage in adversarial behavior at the end to recover disputed cost.

2. Provisions for “Use of Allowances”

3. Define On-site Staff and Management vs. Home Office Overhead

4. Define threshold for “Consumables” and “Small Tools”

5. Log all tools and equipment above the Consumables Threshold designation

6. Cost for weather days, winterization, temp utilities (deposits), permits, etc.

7. No Contractor Discretionary Spending for GC’s – Moving dollars inside the SOV
QUESTIONS AND TAKE-AWAYS

1. Can General Conditions Cost be used on a discretionary spend basis?

2. Does the production of a Change Order (add), require a 10% +/- mark-up of the General Conditions? Should this be a standard default fee?

3. If there is a reduction in GMP project scope resulting in a Change Order (deduct), should there be a corresponding adjustment in the general conditions? Does this apply to both Fixed and variable cost?

4. If the Change Order reduces the project schedule, should there be a corresponding deduction in the General Conditions? Variable Cost?

5. Are the general conditions considered “Cost of the Work”? 
Early Warning Signs (Is there Blood In the Water?)

- Code issues impacting cost
- You would have paid for this cost anyway
- Why don’t you trust us?
- This is how we’ve always done it with other Clients

Do not accept unsubstantiated cost – Open-Book Reporting

Never Compromise your project with a Contractor Relationship.

Construction Fraud – It Exists at all Levels……

Know where your General Conditions risks are……

- Approved schedule – What’s the Critical Path
- What constitutes delays for weather, etc.
- Require transparency – Audit, Audit and then Audit
**Change Order** - A Change Order is a document that adds/deducts work from the original scope of work of a contract, however, depending on the magnitude of the change, it may or may not alter the original contract amount and/or completion date.
Ben Franklin is quoted as saying that the only two things that are certain in life are death and taxes.

The design and construction industry can now add change orders to Dr. Franklin’s list.
Categories of Changes

1. Change Order – ADD
2. Change Order DEDUCT
Types of Construction Change Orders

1. Lump Sum Change Order
2. Zero-Cost Change Order
3. Time & Material Change Order
4. Unit Cost Change Orders
**Lump Sum Change Order**

A contractor uses a lump sum change order when a defined change in the scope can be quantified, and a firm price developed. The project owner can request the change in the scope of work. It can also occur as a result of the contractor finding conditions that mandate a change in project scope.

**Zero-Cost Change Order**

A zero-cost change order is similar to a lump sum change order. The primary difference between the two types is that the zero-cost change order does not alter the contracted price for the project. The purpose of this kind of change order is to document a change in the scope of work regardless of whether there is a change in the cost or schedule.
Time & Material Change Order

Time and material change orders are used when the full costs of a change in scope cannot be determined. There are many instances within a construction project where a change in the scope of work is not foreseen or cannot be defined. Contractors may find deteriorated conditions after project demolition that require repairs before they can begin reconstruction. Attempting to estimate these costs may not be possible. For these types of change orders, the contractor will track the work completed based on the cost of trade time/cost and materials.

Unit Cost Change Order

Unit cost change orders are based on values listed in a unit cost schedule. Contractors negotiate costs for additions to scopes of work that can be defined by specific units of measure. A unit cost schedule allows Owners to control the cost of additional units of work where they may not be able to control the quantity of work.

Project Owners can negotiate the cost of additional units including the contractor’s profit and markup ahead of the actual completion of work. For these types of change orders, the contractor will track the work completed based on the unit of measure in the schedule.
Your ability to control the cost of your project diminishes over the life of the project.

Staying Ahead of the Curve

- High Ability to Influence Cost
- Low Ability to Influence Cost
- Construction Execution
- Pre-Construction Planning
- Schematic / DD Phase
- Final Design Phase
- Procurement Bid & Award
- Close-Out

Cost of Construction

Staying Ahead of the Curve
Common Problems That Lead to Change Orders

REASON CODES

1. Owner Initiated – Buy more scope and program

2. Unforeseen Conditions

3. Design Omission and Errors
   - Incomplete Design
   - Varying Field Conditions against Design
   - Conflicts between plans and specifications

4. Construction Incomplete Scope or Errors

5. Project Delays (Compensatory Damages)
Other common reasons for construction change orders are team errors resulting from lack of communication, scheduling of activities, milestones and phasing, failure to understand incorporate specific directives.

- Starting construction with incomplete design documents and without a fully defined project
- Allow the project delivery schedule to drive and compromise the process for implementing proper delivery strategies and controls
- Negotiating final GMP and General Conditions from incomplete documents
The timing of changes can have varying effects on construction

Tiered Adverse Impacts of Changes

• Project changes can result in delays – CO’s routinely flow-down from one subcontract tier to another. As the Owner, you need to understand the total flow-down affect from the prime Change Order Request (COR) to the lower tier.

• Prime request for additional dollars for missed scope. Prime forces lower tier sub to complete the work at his own cost siting missed scope contractually

• Prime request additional services from lower tier sub, authorize him to proceed on the basis of schedule compression and time, then when the lower tier sub submits the COR and cost, the prime will negotiate the cost down stating it could not possibly cost that much to do the work.

• Prime directs and authorizes lower tier to proceed with additional work, then notifies him that the Owner has rejected the Change Order request
Change Orders impact the scope of other trades and vendors and many times impede progress – Again this can be the starting point for delays and disputes.

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**Change Order Request**

PRJ001 – Jefferson High School (Sample Project)

To
Wayne Skyler
Check It Out LLC
5566 Stonebridge
213-555-4477
213-555-1111 (FAX)

Return To
Richard Dunn
Cinco Bros Construction, Inc.
867 Tumblers Ct
ZZYXZ, CA 92309
987-654-1239
ridu@abc123.com

COR Subject: Lump Sum / Flat Price COR

COR Number: PRJ001-1
COR Revision Number: 0
COR Date: 12/12/2011
Work Type: Price / Proceed

Valid for 60 Days.

Summary
Total: $1,250.00
QUESTIONS AND TAKE-AWAYS – Part 1

1. Does your Change Management Process include “Reason Codes” as part of the approval process?

2. Allowable OH & P mark-ups for subcontracted work and self-performed work?

3. How does your Change Management Process account for Change Order Request related to weather and other compensatory delays?

4. Should Code requirements or directions from (AHJ) Authorities Having Jurisdiction justify the approval of a Contractor Change Order, if it adds scope and schedule? Why? Or Why not?
QUESTIONS AND TAKE-AWAYS – Part 2

1. Should Change Orders be Lump Sum or T & M?

2. Should CO’s be audited prior to approval?

3. Should General Conditions be applied to each Change order?

4. What type of back-up data is required for CO justification?
What Does Your Paper Say?

Lack of Transparency  |  Gaps in Interpretation  |  Failure to Effectively Communicate
Improving Project Outcomes require a change in **Culture** and **Mindset**

**Don’t continue to engage Insanity**

**Insanity:** doing the same thing over and over again and expecting different results.

Albert Einstein
Thank you

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