



Construction contract auditing: Lessons from the field

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Meet today's presenters



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Today's agenda

- Construction audit myths
- Selecting projects
- Engagement methodology
- Contract risk analysis
- Audit program

Construction audit myths

Construction audit are primarily for cost recovery purposes



Great contracts transfer all of the risk from owners to contractors



Owners are never the cause of a problem



Overcharges are just a fact of life and owners need to just accept that fact

Construction audit truths

- Well managed audits minimize owner – contractor conflict
- Project size is not always an indicator of project risk
- Portfolios of small projects with systemic control weaknesses can be more costly than large well run construction projects
- Not all projects are good construction audit candidates



Story time:
Bad Owner



Project selection attributes

Billing at cost

Significant allowances and/or contingency budgets

High volume of design changes

High volume of change orders

Change order value exceeds 10% of contract value



Project selection attributes



Significant personnel turnover



Significant construction delays



Complex contract terms



Significant policy and procedure compliance requirements



Project selection case study: Fixed price contract

Project facts:

- \$20M fixed price contract
- Competitively bid, low bid award is 15% lower than the field
- Construction drawings are at 65%
- Project decision makers are indecisive and budget conscious.

Auditor's qualifying questions:

- Why is this bid so much lower than the field?
- How was the contractor pre-qualified?
- Were construction alternatives proposed?
- Has the owner ever managed a project like this before?



Project selection: Fixed price contract

Yes, this project should be audited:

- Conditions exist that are likely to lead to materially significant change orders
- Bids that are well below the average bid are an indicator of missing scope, missing allowances or underpriced work with the intention to recover through change order
- 65% construction drawings are very incomplete and likely to contain significant design changes before they are complete



Project selection case study: GMP contract

Project facts:

- \$150M project, no maximum price at award
- Competitively bid
- Construction drawings are at 95%
- Selection criteria is qualifications based

Auditor's qualifying questions:

- What evaluation criteria were applied
- How was the contractor pre-qualified?
- What cost limits have been promised?
- What is the likelihood of budget overrun?
- How effective are the project controls?



Project selection: GMP contract

Yes, this project should be audited:

- Too many project performance variables exist
- Project value is significant and requires monitoring
- Project controls have not been evaluated, consequently effectiveness cannot be determined



When shouldn't you audit a project?

- Price is certain and unlikely to have significant changes
- Project delivery team is highly experienced with this type of project
- Project is well defined



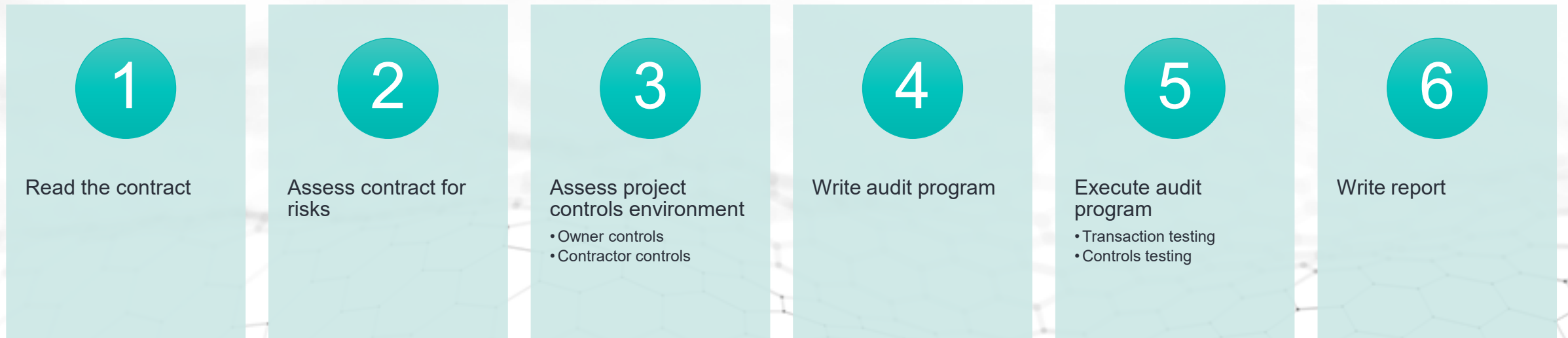


**Story time:
Owner's Rep
Failure**



**Construction
audit
methodology**

Construction audit methodology



Construction contract audit program

Item	Audit Plan	Start Date	Completion Date	Estimated Hours
1	Kick-Off meeting conference call	1/21/2011	1/21/2021	2
2	Develop and Distribute Document Request - multiple (Preconstruction, Interim, and Closeout)	1/26/2021	3/30/2023	10
3	Develop Audit Plan	1/13/2021	1/18/2021	10
4	Develop Audit program	1/14/2021	1/22/2021	10
5	Agree and finalize monthly status reporting	1/21/2011	1/21/2021	2
6	Perform a contract risk review	2/1/2021	2/5/2021	20
7	Issue a contract risk matrix to the Owner identifying all potential risk areas in their contract	2/1/2021	2/5/2021	10
8	Perform Project Controls interviews and evaluate the control environment, identify potential control gaps and weaknesses.	2/8/2021	2/26/2021	15
9	Baker Tilly will perform a comprehensive review of the labor billing rate comparing the rate to the individual actual cost for each component of the labor billing rate calculation. Report any variations or deviations to the Owner.	2/8/2021	2/25/2021	15
10	Issue pre-construction audit findings for Owner input and comments	2/22/2021	3/5/2021	20
11	Perform a monthly pay application review and rollover calculation (24 months)	3/31/2021	3/31/2023	200
12	Perform a monthly review of the change order approval and cost support backup/compliance with the contract documents	3/31/2021	3/31/2023	30
13	Perform an interim audit around 50% complete, areas to test include	3/1/2022	4/30/2022	200
	a. Subcontract costs are accurately reported			
	b. Purchases are net of sales tax			
	c. Owner direct purchases are correctly accounted for			
	d. General requirements and general conditions are billed at cost, and there are no duplications			
	e. Labor billing is in compliance with the contract and any adjustment made in the pre-construction phase			
	f. Self-performed work is billed correctly and compliant with the contract			
	g. Allowances are properly accounted for and a change order has been issued to reconcile the allowances			
	h. Contingency balances have been properly accounted for and approved in compliance with the contract			
	i. Reconcile insurance charges to actual costs, fee percentage to the contract and and surety cost to an actual invoice			
	j. Determine that the monthly reporting was compliant and complete			
	k. Compare the overall amount billed and paid to the Contractor's job cost as of a set date. Report significant overbillings or underbillings			
	l. Identify all project risks to complete the job			
14	Issue interim audit findings for Owner input and comments	4/23/2021	4/30/2021	40
15	Perform a close-out audit and specifically test for these items and any other item identified from the interim audit	6/1/2023	7/15/2023	200
	a. Ensure all final contract values include settlement or documentation of outstanding commitments			
	b. All allowances have been reconciled with proper cost support			
	c. Review project risks for obligations and mitigation strategies			
	d. Review and reconcile final subcontractor default insurance (SDI) cost			
	e. Project turnover needs to be complete prior to final payment to contractor			
	f. Ensure the accounting for all tools and equipment purchased on UC Health/HPLex behalf is properly done.			
	g. Closeout and resolve all outstanding audit issues			
16	Issue final audit report on findings from testing and interviews.	7/1/2021	7/15/2021	40
17	Subtotal Hours			824



Construction contract types

- Guaranteed maximum price (GMP)
- Stipulated sum or fixed price
- Design – Build
- Unit price
- Integrated project delivery (IPD)
- Engineer – procure – construct (EPC)
- Time and materials with a mark up

Reading tips:

- Language that is vague or refers to a standard. Terms like customary, in the course of business, industry norms should be flagged and require greater specificity
- The phrase “is not subject to audit” or “cannot be audited” or any other like kind phrase should raise the question why not? And if it was previously negotiated is there an analysis supporting the agreed upon rate?
- The term “cost” should represent only the actual direct cost of the category without additional indirect burden or profit
- Document computational formulas and verify components are appropriate for the cost item

Contract risk analysis

Document Name	Testing Area	Sub Testing Area	Contract Section	Contract Language	Risk	Contract Language Improvement / Mitigating Project Control	Recommendation	Audit Program Step
Construction Management Agreement	Contingency	N/A	3.3 Construction Cost and Schedule Submissions (E)	The proposed Construction Cost/Schedule Submission shall include a "Contingency" of not more than five percent (5%) of the sum of estimated Trade Work Costs and General Conditions Work Costs (as hereinafter defined).	Inflated contingency budget	Mitigating Project Control	N/A	Recalculate the contingency in the proposed construction cost/schedule



Unfavorable contract terms



Subcontractor default insurance is 1.5% of the total project cost



Liquidated damages that are under priced



Prohibiting retroactive adjustments or changes



Payment terms that prohibit partial payment

Compensation or fee

Types:

- Percentage as a cost of work
- Fixed price
- Multiplier
- Shared savings

Contract risk:

- Fee computation is using factors that artificially inflates the allowable fee. Such as computing fee on fee



Change order control

Change orders are modifications to contract terms, conditions, schedule, specifications or price.

Contract risk:

- Failure to define:
- Authorization matrix
- Required format and documentation
- Required timing
- Submittal process



Cost of work

Defining the allowable and non-allowable reimbursable cost categories:

- Labor
- Equipment
- Materials
- Subcontractors
- General conditions

Contract risk:

- Failure to limit reimbursables to actual cost incurred. AKA: Embedded profit



Contingency usage

Many projects have a contingency budget to pay for unexpected cost increases that are within the project specifications.

Contract risk:

- Reviewers should be wary of language stating the contingency is for the exclusive use by the contractor.
- Very small or very large contingencies are red flags indicating extra testing may be required to verify contingency usage

General conditions

Contractor's cost for job site administration and management.

Contract risks

- Budgets allow for embedded profit
- Lack of specificity is a red flag for additional audit procedures
- Project team names should be defined, personnel changes should require owner approval
- General conditions cost are a function of time and resource



Case study

Facts

- \$35M GMP
- \$3.6M fixed general conditions, \$150K/mo
- 5% contingency budget
- Contractor's exclusive use
- 24-month schedule
- Subcontractor bids are 5% higher than expected
- Contractor is billing general conditions at \$200K/mo



Case study

- \$300,000 of contingency applied to general conditions
- \$1,450,000 of contingency applied to subcontractor budget shortfall
- Contractor requests \$500,000 change order for subcontractor budget shortfall
- Owner authorizes change order
- No delays and project finished on time



What is wrong with this project?



Fixed general conditions should have protected the owner



No contingency control empowered the contractor to spend the budget



Owner's only recourse is to pursue litigation.



Owner overspent \$300,000 on general conditions

Construction controls review

Owner construction controls review

Interview topics:

- Pay application control
- Change order control
- Schedule control
- Risk register management
- Financial reporting
- Progress reporting
- Project management documentation

Interviews with:

- Project manager
- Project accountant
- Corp Finance
- Facilities Development Director



Contractor's control review

Interview topics

- Pay application control
- Change order control
- Schedule control
- Risk register management
- Financial reporting
- Progress reporting
- Project management documentation


Interviews with:

- Project executive
- Project manager
- Project accountant
- General superintendent



The background is split into two vertical sections. The left section is a solid teal color. The right section features a complex, wavy pattern of light grey and white lines that create a sense of depth and movement, resembling a stylized fingerprint or a topographical map.

**Story time:
Bad
arithmetic**

The background is a solid red color with a subtle, repeating pattern of concentric circles and radial lines, creating a grid-like effect. The text is positioned on the left side of the image.

Transaction testing

Pay application testing

Audit program

- Roll forward reconciliation
- Supporting documentation verification
- Reconcile billings with progress
 - Fee
 - General conditions
 - Soft costs

Audit risks

- Mathematical accuracy
- Formula accuracy
- Billing ahead of progress



Change order testing

Audit risks

- Overpriced
- Unauthorized
- Over scoped
- Duplicate scope
- Unnecessary
- Accidental
- Duplicate change order

Audit program

- Control schedule of change orders
- Verify arithmetic
- Reconcile supporting documentation
- Review owner analysis
- Verify authorization
- Verify scope
- Verify pricing



Case study

ABC Electrical Contractor			
Time and materials for installing standby generator.			
Owner to provide generator			
Labor	24 hours at \$100 per hour		\$2,400.00
Materials	50 ft 8 gauge wire		
	Connectors		
	Transfer box		
	Conduit		
			\$1,450.00
Subtotal			\$3,850.00
Overhead and markup 15%			\$ 577.50
Total			\$4,427.50

Facts:

- Contract terms limit subcontractor change order markup to 15% of cost
- Contractor submitted the following change order:



General conditions testing

Audit program

- Verify labor rate application
- Reconcile sample of timesheets to billings
- Verify labor rate is cost based
- Reconcile with supporting documentation
- Verify costs reasonably match progress

Audit risks

- Incorrect labor rates
- Extra hours billed for exempt employees
- Billings exceed hours
- Labor rates are not cost based
- No supporting documentation
- Billings progress and not cost based
- Double billing



Labor burden analysis

	POV 1	POV 2	POV 3
Annual Salary	\$ 90,000	\$ 90,000	\$ 90,000
Annual work year	2,080	2,080	2,080
Benefit hours	-	160	160
Billable year	2,080	1,920	1,920
Base wage rate	\$ 43.27	\$ 46.88	\$ 46.88
401K 3%	\$ 1.30	\$ 1.41	\$ 1.41
Health and welfare \$1,200 per month	\$ 6.92	\$ 6.92	\$ 6.92
Safety 1.5%	\$ 0.65	\$ 0.70	\$ 0.70
Other 1%	\$ 0.43	\$ 0.47	\$ 0.47
Workers compensation 8%	\$ 3.46	\$ 3.75	\$ 3.75
FUTA 6% of first \$7,000	\$ 0.20	\$ 0.22	\$ 2.81
SUTA 6.6% of first \$14,000	\$ 0.44	\$ 0.48	\$ 3.09
Medicare 1.45%	\$ 0.63	\$ 0.68	\$ 0.68
FICA 6.2%	\$ 2.68	\$ 2.91	\$ 2.91
Billing rate	\$ 59.99	\$ 64.41	\$ 69.62
Contract rate	\$ 85.00	\$ 85.00	\$ 85.00
Variance to cost	\$ (25.01)	\$ (20.59)	\$ (15.38)
24 month project	\$ (52,027.40)	\$ (39,534.60)	\$ (29,538.60)
Benefit hours AJE		\$ (27,200.00)	\$ (27,200.00)
Total labor impact	\$ (52,027.40)	\$ (66,734.60)	\$ (56,738.60)



Reimbursable cost testing

Audit program

- Determine sample size of reimbursable costs
- Reconcile billed costs with
- Supporting documentation
- Reimbursable contract terms
- Verify costs haven't been billed twice
- Verify costs haven't been paid twice
- Verify costs are not shifted from non-allowable category

Audit risks

- Duplicate charges
- Cost shifting
- Billing for non-allowable costs
- Arithmetic errors
- Billing in excess of contract value
- Billing for nonexistent costs
- Billing in excess of progress



Insurance testing

Audit program

- Reconcile certificates of insurance with contract terms
- Reconcile billings with actual premiums
- Verify SDI costs are for enrolled subcontractors only
- Verify subcontractor bids exclude insurance on controlled insurance programs

Audit risks

- Incorrectly calculating insurance billings
- Subcontractors bill for insurance already paid for in controlled program
- Billings are based on allowances, not actual costs



Case study: insurance

- Facts

- \$50M GMP
- SDI 1.5% of cost of work
- \$32M subcontract costs
- \$30M subs enrolled in SDI program

- Outcomes

- Owner billed 1.5% of \$45M cost of work: \$675,000
- SDI should have been 1.5% of \$30M: \$450,000
- Contract terms empowered the contractor to collect an extra \$225,000





Story time: **Collusion**

Special audits

- Certified payroll
- Project labor agreement
- Controlled insurance program
- Subcontractor default insurance
- Workforce compliance
- Covenant compliance
- Certified construction costs
- Owner direct purchases
- Sales tax exemption
- Self-performed work



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- Construction audit essential e-book
- On-demand contract controls and audit webinar series
- Coming soon: NEW construction risk management video series



Questions?



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