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Brick by Brick:

Building Construction Audit Skills in Internal Audit

The information provided here is of a general nature and is not intended to address the specific circumstances of any individual or entity. In specific circumstances, the services of a professional should be sought.

ACUA
ASSOCIATION OF COLLEGE & UNIVERSITY AUDITORS
Advancing Auditing in Higher Education

Learning objectives

- Understand key construction terminology (e.g., lump sum, guaranteed maximum) and the steps of the construction process lifecycle (i.e., pre-construction, construction, post-construction)
- Identify gaps in current pre-construction activities and the institution's responsibilities
- Evaluate how internal audit can participate most effectively in construction activities and create a collaborative work environment with development parties

Why conduct a construction audit?

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An audit can:

- Serve as a risk management tool with construction procedures
- Provide assurance that university money is handled properly
- Assist in minimizing project construction costs
- Identify improvement opportunities concerning project control and construction cost recovery
- Refine provisions within the contract to address risk
- Help establish policies and procedures for monitoring processes related to the institution or contractor

Considerations for conducting an audit

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Understanding the environment

- Who is responsible for the construction activity?
- How does the construction activity fit into the institution's strategy?
- Is management prepared to prioritize the audit?
- Does the institution have the right resources to address the audit recommendations?
- What parts of the construction lifecycle would you be auditing?

Considerations for conducting an audit

Evaluate internal resources and capabilities

- Does the internal audit team have the technical knowledge to conduct the audit?
- How do you plan for and determine the timing of the audit?
- What technical resources are available to the team?

Involving internal audit professionals in construction activities

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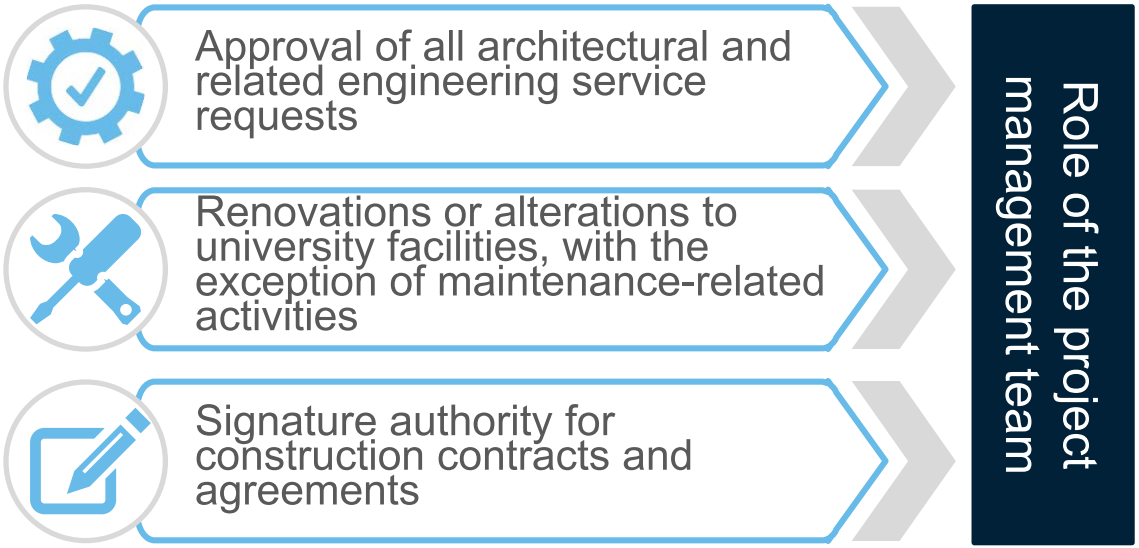
Create a collaborative environment

- Demonstrate a working knowledge of construction
  - Learn to speak the language of construction and contractors
  - Provide real-time feedback to help prevent compliance issues
- Commit resources to the construction project from the beginning
- Be responsive to avoid delaying the construction process
- Recognize the limitations of other construction professionals to fulfill compliance responsibilities

Institution's project management team

Role of the project management team



External project management team

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Institution's representative

Architect

Construction manager

Other groups and external stakeholders


Owner Responsibilities
Owner's Rep
Internal Control
Architect
Construction Manager
Pre-Construction
Feasibility & Design
Contractor Selection
Contracting Process
Pricing Provisions
Change Order Pricing
Contingency Budget Control
Allowable and Non-allowable Expenses
Owner's Right to Audit
Estimating
Construction
Change Order Control
Change Order Pricing
Progress Reporting
Change Order Scope
Project Controls
Budget Reporting
Cash Flow Reporting
Estimate to Complete
Contract Accounting
Schedule Management
Business Ethics Compliance
Document Compliance Requirements
Design, Plan & Spec. Compliance
Contract Compliance Pricing
Contract Compliance Service Provided
Post-Construction
Financial Reconciliation
Shared Savings Calculations
Contingency Reconciliation
Allowances & Credits Reconciliation
Closeout Reporting/Cost Audit
Final Walk-through Punch List

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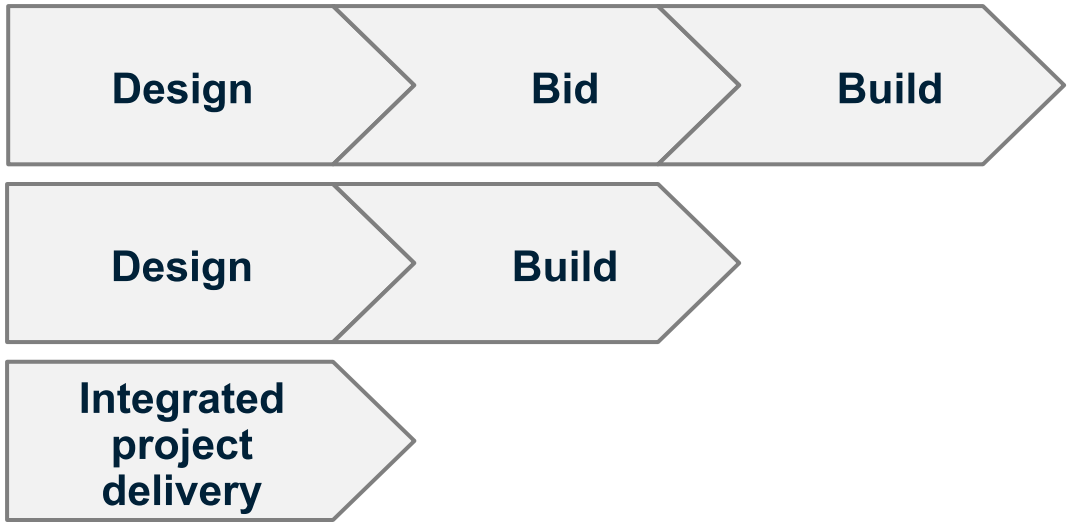
Competitive bid

Negotiated

Master services agreement

Contracting key terms

Project delivery methods



Contracting key terms

Contract type

Lump sum

- Usually less than $10 million
- Facility is fully designed
- Designs are simple and often a duplicate of another facility
- There are fewer unknowns that lead to change orders

Benefits

- Known financial commitment
- Less institution’s administrative burden
- Less risk of scope creep and budget overrun

Lump sum, *cont.*

Disadvantages

- Limited cost visibility
- Can prevent institutional participation in value engineering, favorable subcontractor buyouts and advantageous commodity pricing during construction
- Limited cost visibility can make it easier to conceal non-compliance with project specifications

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Guaranteed maximum price (GMP)

- Usually used on larger projects
- Project nature is complex with unknowns
- Often coupled with a concurrent design process

Benefits

- Establishes a not-to-exceed price
- Enables the institution to benefit from value added engineering, price reductions, and well managed procurement
- Enables the institution to select and contract with the contractor while still designing the facility

GMP, *cont.*

Disadvantages

- Requires a more complex contract that specifies as much as possible
- Burdens the institution with more project management and administration
- Project complexity leads to more opportunity for aggressive or abuse behavior
- Contractors like to believe that their budget is the entire maximum price

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Key terms that apply to all contracts

- Owner's/institution's responsibilities
- Contractor's responsibilities
- Allowable and non-allowable reimbursable costs
- Terms for general conditions/general requirements reimbursement
- Payment application documentation requirements
- Change order process for scoping, pricing and approval
- Process for using and reporting contingency budget
- Process for handling owner allowances and credits
- Substantial completion
- Right to audit

Costs of the work

Definition of allowable and non-allowable costs

- **Materials, supplies and equipment**
- **Subcontractor costs**
- **Self-performed construction costs**

General conditions

General conditions is the contractor's compensation for overhead and indirect project cost

Lump sum	Cost reimbursable

Pay application (invoice) documentation

Each month the pay application should be accompanied by:

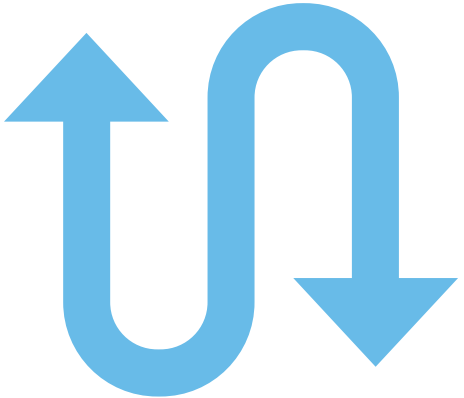
- Job cost detail
- Material invoices and receiving tickets
- Time sheets for self-performed work
- Subcontractor invoices
- Equipment logs for contractor provided equipment
- Lien waivers
- Equipment rental invoices

Reconciliation of project expenditures

- Job cost detail should include all hard and soft costs, and should be reconciled to the pay application
- Soft costs are the indirect costs associated with the construction project, such as:
  - General conditions
  - Construction management fee
  - Insurance and bonding
  - Hard costs (the direct costs for constructing the facility)
  - Materials, supplies and equipment
  - Subcontractor costs
  - Self-performed construction costs

Change order contract provisions

- Change order provisions should include the following:
  - Definition of major and minor change order
  - Authority for approving each type of change order
  - Authority for using contingency budget
  - Change order documentation requirements



Change order contract provisions

- Change order documentation should include:
  - Who is performing the work
  - Cost breakdown of materials and labor with quantities and rates for each
  - Contractor markup
  - Clear description of the scope of work
  - Clear description of why the change order is necessary

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Substantial completion

Documentation requirements

Cost savings

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Well-defined project controls can assist with the following:

- Early detection of non-compliance items
- Prevention of abusive behaviors
- Minimize the “I forgot” and lost document syndrome
- Higher return on investment
  - Typically three percent or more of the construction costs

Project controls assessment

Contracting

- Verify compliance with institution policy and procedures
- Identify controls in place to address financial risk areas
- Review risk mitigation terms such as right to audit language and insurance and bonding requirements
- Verify terms related to cost of the work, allowable and non-allowable reimbursable charges, change order pricing, allowance and contingency use are defined

Project controls assessment

Bid and award control

- Verify proper application of procedures, documentation and approvals
- Examine processes to determine the application of standard institutional bidding procedures, presence of competitive bidding, vendor prequalification, requirements for sole source selections and adherence to approval policies
- Assess controls specific to the bid prequalification and advertising process, evaluation of bid completeness and alternates and the contract award process

Project controls assessment

Communication and document control

- Review project management's document control system
- Verify project reporting to management and key stakeholders
  - What is reported
  - How often

Billing practices

- Processing and payment of contractor payment applications, owner direct materials purchases, vendor invoices and consultant billings
- Validate billing policies and procedures to ensure controls cover:
  - Reconciliation of amounts billed to cost support
  - Mathematical accuracy
  - contractual compliance of charges
- Review billing procedures for lump sum contract amounts for inclusion of procedures to validate percentage of work physically completed for each line item billed

Project controls assessment

Change order control

- Evaluate change order management to review, track and approve contract change orders
- Approval authority
- Change order analysis
  - Identify cause of the change and potential scope duplication
  - Reconcile supporting cost documentation and verify mathematical accuracy
  - Ensure contract rates and markups are contractually compliant

Project controls assessment

Project closeout

- Review procedures related to the inspection of completed work
- Punch list completion
- Ensure controls address:
  - Contract fulfillment
  - Lien waiver tracking
  - Closeout documentation requirements
  - Warranty tracking

Additional resources

- ACUA listserv
- www.bakertilly.com/construction-audit-webinar
- http://www.theiia.org/
- https://www.thenaca.org/
- http://www.caacci.org/
- http://rsmeans.reedconstructiondata.com/
- http://www.auditnet.org/