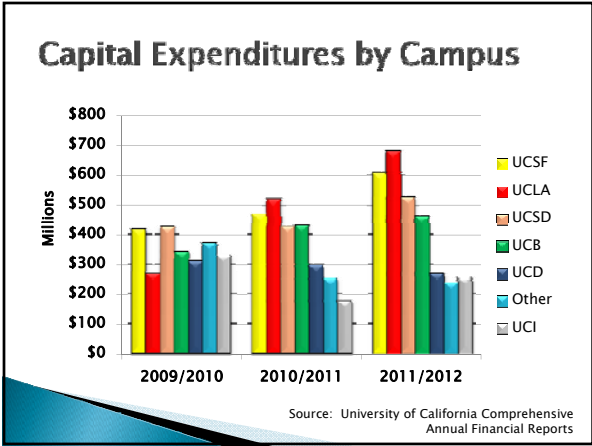


How to Add Value in a Construction Audit

Greg Buchanan, UCSD Audit & Management Advisory Services
Jim Gillie, UCSD Facilities Design & Construction

Session Topics

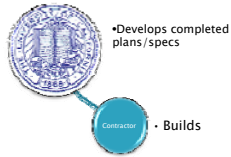
- ▶ Types of Construction Contracts
- ▶ Major Capital Projects Construction Phases
- ▶ Construction Pre-Award Reviews
- ▶ Construction Change Order Reviews



Construction Contract Types

▶ Lump Sum/Fixed Price

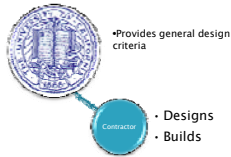
- Contracted price is fixed
- Requires complete plans and specifications setting forth directions in enough detail to enable a contractor to carry them out



Construction Contract Types

▶ Design/Build

- Single contractor selected for project design and construction
- University provides general design criteria
- Assumed efficiencies in project coordination, constructability and cost of changes



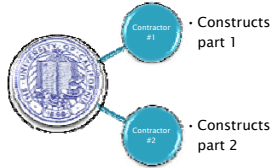
Construction Contract Types

▶ Construction Manager (CM) at Risk

- University contracts with a one entity to provide CM services during design; then to provide labor, materials and project management during construction as a General Contractor (GC)
- Involves competitive bids at two different phases
 - Selection of CM/GC
 - Selection of subcontractors
- Popular contracting method for large, complex projects

Construction Contract Types

- ▶ Multi-prime
 - Project divided into two or more contracts
 - Administratively burdensome and higher risk
 - Rarely used



Construction Phases (Post-funding)

- ▶ Design
 - Design firm selected by University (except Design/Build)
 - **Inadequate design could result in wide range of bids and/or material change order requests**
 - Must follow the UC Facilities Manual Vol. 3



Construction Phases (Post-funding)

- ▶ Contractor Selection
 - Informal vs. formal competitive bidding
 - Advertisements for bids
 - Determining bidder responsibility
 - Collecting and opening bids
 - **Risks include bidder rotation and lack of sufficient qualified bidders**
 - Bids are evaluated in accordance with FM, Volume 5, Part I



Construction Phases (Post-funding)

▶ **Construction**

- University project managers perform construction administration during the construction phase, including:
 - Maintaining project files
 - Project inspections
 - Monitoring project schedule and statutory requirements (i.e. prevailing wage and payroll records)
 - Reviewing and certifying contractor payments and modifications, such as field orders and change orders
- Risks include excessive costs and use of poor materials
- Requirements set forth in FM, Volume 5, Part II

Contractor Selection (Pre-Award) Reviews

- » Ensure selection processes comply with the FM, and are effective for ensuring competitive project costing

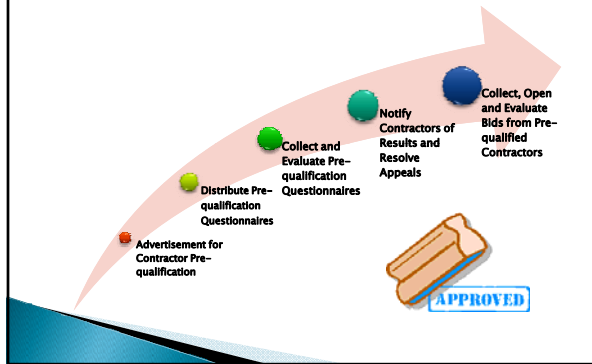
Contractor Selection Requirements

- ▶ Projects exceeding \$100,000 require a formal competitive bid, which includes:
 - Advertising project
 - Timely receipt of sealed bids
 - Publicly opening bids
 - Preparation of a Bid Summary
 - Awarding the contract to lowest *responsible* bidder

Responsible Bidder and Pre-qualification

- ▶ Per FM, Volume 5, Part I, Section 4.1 – “A ‘responsible’ bidder is one who is able to satisfactorily perform the work. A contract does not have to be awarded to the lowest bidder if that bidder is not responsible, as determined by the University”
- ▶ Pre-qualification used to determine bidder responsibility

Pre-qualification Procedures



Evaluating advertisements to bidders (FM Volume 5, 1.1.1)

- ▶ Was the project properly advertised?
- ▶ What newspaper and trade publications were used?
- ▶ Was the advertisement timely?



Evaluating Pre-qualification (FM, Vol. 5, Section 4.3.2)

- ▶ Pre-qualification questionnaire scoring
- ▶ Time afforded to submit questionnaires
- ▶ Adequacy of pre-qualification pool
- ▶ Pre-qualification evaluation panel
- ▶ Disqualification of potential bidders



Evaluating Receipt and Opening of Bids (FM Volume 5, Chapter 6)

- ▶ Pre-bid conference and instructions to bidders
- ▶ Timeliness of addenda to the bidding instructions (if applicable)
- ▶ Enforcement of bid deadline
- ▶ Sealed bids that bids are tabulated and date/time stamped
- ▶ Opening and announcement of bids

Evaluating Subcontractor Bids (If applicable)

- ▶ CM at Risk contracts require that CM perform subcontractor bidding
- ▶ Construction contract contains requirements
- ▶ Watch for CM self-bidding



Best Value Contractor Selection (FM Volume 5, 1.6)

- ▶ Starting January 2012, the University can use an alternative form of contractor selection called "Best Value Contractor Selection"
- ▶ Follows Public Contract Code Section 10506.4
- ▶ Requires that the facility evaluate bids based on bid amount *and* bidder qualifications
- ▶ Selected contractor may not be the lowest responsible bidder




Change Order Reviews



Why conduct a change order review?

- ▶ High susceptibility for errors and/or misstatements
- ▶ Second set of eyes for the project manager
- ▶ Contractor/sub-contractor awareness
- ▶ Scope: Major capital project with multiple change orders. Sample or 100% testing dependant on number of change orders

Understanding Article 7



Definitions:

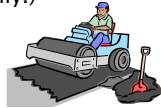
- ▶ Change order
- ▶ Unilateral Change order - When to use it
- ▶ Field Order - a directive to proceed (will discuss a little later)

Change Order Procedure:

- ▶ Contractor submits Change Order Request (?) and Cost Proposal (forms in contract). Contractor cannot charge for the cost of preparing a Cost Proposal (ever?) and the contractor is responsible for costs associated with delay in submitting cost proposal (don't count on it).
- ▶ The "Cost of Extra Work" - what costs are allowable and unallowable with some discussion of exceptions. Note: Bond & Insurance (max. 2%) ARE "Costs of Extra Work"!

CM/Contractor Fee:

- ▶ The CM/Contractor's Fee is the only cost charged by the contractor beyond the allowable "Cost of Extra Work".
- ▶ No contractor may charge a fee on top of a sub tier contractor's fee. This conflicts with calculations indicated on cost proposal forms. Inconsistent with contractor's "actual costs". (What is fair?)
- ▶ CM/Contractor is not entitled to fee unless the Maximum Anticipated Contract Value has been exceeded. (CMAR contracts only.)



Compensation (preferences) for Computing Extra Work:

- ▶ Unit Prices contained in the contract documents – (Subject for a bid strategy discussion)
- ▶ Agreed upon lump sum supported by a cost proposal – (what we normally do.)
- ▶ *"Where University and CM/Contractor cannot agree upon a lump sum, by the Cost of Extra Work plus CM/Contractor Fee applicable to such Extra Work." Does that mean paying the actual cost plus the fee without a mutual agreement? Unilateral Change Order? Field Order? Time & Material? The next heading in Article 7 states, "As a condition to CM/Contractor's right to an adjustment of the contract sum...CM/Contractor must keep daily detailed and accurate records itemizing each element of cost and shall provide substantiating records and documentation, including time cards and invoices..."*

Cont'd.

- ▶ Credits: 1) priced by unit prices in the contract, 2) if change includes adds and credits the fee is charged on the sum of the two, 3) there is no mention of the contractor crediting back fee on a credit change (as long as contractor has passed on full credit)

**Field Orders:
Issued by University subject to
the following:**

- ▶ FO may state that it does not constitute a change in the work. (Use as a directive to proceed with disputed work.)
- ▶ Contractor must give notice if disagrees that FO is not a change.

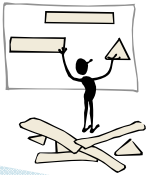
Cont'd.

- ▶ FO that states that it *is* a change still requires contractor to comply with Article 7 & 8 (Contract Time - for another day)
- ▶ FO considered extra work by University may or may not contain University's estimate of the adjustment to cost and/or contract time. If estimate is included then: (A) Contractor shall not exceed University's estimate without written notice to the University. And (B) Contractor must follow all applicable provisions of Article 7 to pursue costs/time in excess of estimate.
- ▶ Contractor must proceed with the work indicated in a field regardless of contractor believes it is extra work or not.

**Waivers:
(We do not have to be consistent!)**

- ▶ *7.6.1 A waiver of or failure by University or University's Representative to enforce any requirement in this Article 7, including without limitation the requirements in Articles 7.3.6, 7.3.8, 7.3.9, 7.3.10, 7.3.11, or 7.3.12 in connection with any adjustment of the Contract Sum, will not constitute a waiver of, and will not preclude the University or University's Representative from enforcing, such requirements in connection with any other adjustments of the Contract Sum.*

**HOW TO EVALUATE A
CHANGE ORDER REQUEST
& CHANGE PROPOSAL**




**Entitlement:
Article 1 of the General
Conditions:**

- ▶ **1.3 INTERPRETATION**
 - 1.3.1 *The Contract Documents are complementary and what is required by one shall be as binding as if required by all. In the case of conflict between terms of the Contract Documents, the following order of precedence shall apply:*
 1. *The Agreement*
 2. *The Supplementary Conditions*
 3. *The General Conditions*
 4. *The Specifications*
 5. *the Drawings*

Scope of work: Quantity Checks

- ▶ PM should be generally aware of the scope of the changed work.
- ▶ Contractor should verify scope of changed work.
- ▶ Designers may be asked/required to verify the scope of the changed work.
- ▶ Have contractors/subcontractors explain scope in meetings



Pricing of the Cost of Extra Work:

- ▶ Gut Check
- ▶ Contractor should verify costs of extra work
- ▶ Designers may check pricing
- ▶ Have contractors/subcontractors explain pricing in meetings
- ▶ In extreme cases - hire a 3rd party estimator?

Check for Allowed and Disallowed "Cost of Extra Work"

- ▶ Costs to consider if a direct result of the change: Clean-up & Hauling, Lay-out & Set-up, Rescheduling, Re-sequencing, Change Coordination, Working Forman (%), etc...



Contractor's Fee:

- ▶ Per General Conditions, bond and insurance are included in the "Cost of the Extra Work" and fees are non-accumulative and are charged after bond & insurance.
- ▶ Exhibit 8 of the Agreement - General and Sub Contractor Cost Proposal Summary Sheets: Forms 1&2 - Indicate the fees are accumulative and that the bond percentage is on top of the fees.
- ▶ Since the Agreement (and its Exhibits) trumps the General Conditions: the cost calculations per Exhibit 8 are to be followed!

SUBCONTRACTOR COST PROPOSAL SUMMARY SHEET - Form B

Contractor Name: _____ Cost Proposal Ref: (Date): _____

| Description | Costs (\$) |
|---------------------------------------------------------------------------------------------------------------|------------|
| NET COSTS when including 10% of Net Cost for each line item | |
| 1. TOTAL NET COSTS (From Form A) | 0 |
| 2. Materials, Permits, (Other, Etc.) | 0 |
| 3. SUBTOTAL LINE 1 & 2 | 0 |
| 4. Insurance - Rate _____ % of Line 3 | 0 |
| 5. COST OF EXTRA WORK - This Subcontractor Only - Total Lines 3 & 4 | 0 |
| 6. MARKUP FEE - for all work performed - 10% of Line 3 * This Subcontractor Only (7.5) | 0 |
| 7. SUBTOTAL THIS SUBCONTRACTOR - Lines 3 & 6 | 0 |
| 8. SUMMARY OF COSTS Lower Tier Subcontractor - Sub-subcontractors From Form C Subcontractors | 0 |
| 9. SUBTOTAL LINE 8 | 0 |
| 10. HAZARDING FEE - Member 1% of Line 9 | 0 |
| 11. TOTAL THIS SUBCONTRACTOR - Total Lines 7, 8, 9, 10 (Sum to the 8. Gen. Contractor Summary Sheet - Form B) | 0 |

NOTE: * Round off all Costs to the nearest dollar. Costs from Labor Rate Breakdown sheet.

GENERAL CONTRACTOR COST PROPOSAL SUMMARY SHEET - Form C


Contractor Name: _____ Cost Proposal Ref: (Date): _____

| Description | Costs (\$) |
|----------------------------------------------------------------------------------------|------------|
| NET COSTS when including 10% of Net Cost for each line item | |
| 1. TOTAL NET COSTS (From Form B) | 0 |
| 2. Materials, Permits, (Other, Etc.) | 0 |
| 3. SUBTOTAL LINE 1 & 2 | 0 |
| 4. Insurance - Rate _____ % of Subtotal | 0 |
| 5. COST OF EXTRA WORK - Total Lines 3 & 4 | 0 |
| 6. MARKUP FEE - for all work performed - 10% of Line 3 | 0 |
| 7. TOTAL GENERAL CONTRACTOR PERFORMED WORK - Total Lines 3 & 6 | 0 |
| 8. SUMMARY OF COSTS Lower Tier Subcontractor From Subcontractor Summary Sheet - Form B | 0 |
| 9. (If not Subcontractor) | 0 |
| 10. SUBTOTAL LINE 8 - Sum of all Lower Tier Subcontractors | 0 |
| 11. HAZARDING FEE - Member 1% of Line 9 | 0 |
| 12. SUBTOTAL GENERAL CONTRACTOR - Total Lines 7 & 11 | 0 |
| 13. BONDS - _____ % of Line 12 | 0 |
| 14. TOTAL THIS COST PROPOSAL - Lines 11 & 13 | 0 |

NOTE: * Round off all Costs to the nearest dollar.

Labor Rates:

- ▶ **“Prevailing Wage Employer Payments”** – Total Hourly Rate: this the sum of the Basic Hourly Rate, plus the Employer Payments i.e. fringe benefits (Health & Welfare, Pension, Vacation/Holiday, Training & Other). Don’t get hung up on the \$ amounts of the fringes, just look at the Total Hourly Rate for straight time and overtime.
- ▶ **“Labor Burden Paid by Employer”** – Employer Burden: Includes Worker’s Comp, State Unemployment Insurance (SUI), Federal Unemployment Insurance (FUI), Social Security (FICA) and Medicare (FMI). **NOTE: State Disability Insurance (SDI) is NOT an employer burden**, it is a cost deducted from employee’s paycheck – check your own)
- ▶ Worker’s Comp – there is a range of percentages applicable to different trades.
- ▶ SUI – Statutory rate of 6.2%
- ▶ FUI – Statutory rate of 0.8%
- ▶ FICA – Statutory rate of 6.2%
- ▶ Medicare – Statutory rate of 1.45%



Cont'd.

- ▶ Multiply each of these percentages, individually, times the Total Hourly Rate and sum the total. This is the labor rate, per trade, that is to be used on our Cost Proposal Forms. You could double check against a certified payroll report.
- ▶ Have the contractor verify the Total Hourly Rate (attach wage determination?)
- ▶ Have the contractor convert the employer burden percentages to dollars by multiplying by the Total Hourly Rate.

Form IV

LABOR RATE BREAKDOWN
for UCSD COST PROPOSALS/FIELD ORDERS

CONTRACTOR/SUBCONTRACTOR _____ Date _____

X **1.00** BASIC HOURLY RATE \$10.00 CRAFT

Providing Major Employer Payments
 HEALTH AND WELFARE _____
 PENSION _____
 VACATION/HOLIDAY _____
 TRAINING _____

→ **0.00** SUBMIT - Employer Payments @ 0% of 10.00 Hourly Rate

Labor Burden paid by Employer
 WORKERS COMP INSURANCE - General @ 1.5% UCOP
 STATE UNEMPLOYMENT (SUI) @ 0.5%
 FED UNEMPLOYMENT (FUI) @ 0.4%
 SOCIAL SECURITY (FICA) @ 0.2%
 MEDICARE (FIM) @ 0.15%

0.00 Subtotal Burden
 E TOTAL LINES 1 + 2 + 3

I certify the above information is true and correct
 Signed _____

June 15, 2008
 Revision 0
 UCSD

New Form 4

LABOR RATE BREAKDOWN
for UCSD COST PROPOSAL/FIELD ORDERS

CONTRACTOR/SUBCONTRACTOR _____ Date _____

Hourly Rate: \$ _____ Total Hourly Rate for _____ CRAFT
 Wage Determination: _____ (copy attached)

Employer Payments (burden)

| | | |
|---|----------|-------------------------------------------------------|
| + | \$ _____ | Total Hourly Rate multiplied by Worker's Comp @ _____ |
| + | \$ _____ | Total Hourly Rate multiplied by SUI @ 0.2% |
| + | \$ _____ | Total Hourly Rate multiplied by FUI @ 0.2% |
| + | \$ _____ | Total Hourly Rate multiplied by FICA @ 0.2% |
| + | \$ _____ | Total Hourly Rate multiplied by FIM @ 0.15% |
| + | \$ _____ | Labor Rate for Form 3 - Cost Breakdown |

I certify the above information is true and correct:
 Signed _____

Real-life Finding #2

- ▶ During a review the following was noted pertaining to insurance/bond costs
 - Some subcontractors assessing 2% insurance/bond
 - General Contractor assessing 1.2% in "SubGuard Subcontractor Bond" costs
 - General Contractor assessing 2% insurance/bond costs
 - Result???
 - Compounding of bond/insurance costs
 - Insurance/bond costs exceeding 2% of approx. **\$11,000**

Questions?