

THE ENGINEERS CLUB OF PHILADELPHIA

CONSTRUCTION COST ESTIMATING COURSE OUTLINE

AGENDA

I. Session One

- Introductions
- Cost Estimating/Cost Management Presentation – AIA Accredited
 - i. Introduction
 - 1. Cost Factors
 - 2. Cost Opportunity
 - ii. Review Estimating Basics
 - 1. CSI format
 - 2. Uniformat/System
 - 3. Elements of a Construction cost Estimate:
 - a. Direct/Trade Costs
 - b. Indirect Costs
 - 4. Estimating Definitions
 - 5. Estimating Sources
 - iii. Design Cost Control
 - 1. Project Cost Elements
 - a. Site Development
 - b. Direct Costs –Hard
 - c. Indirect costs
 - d. Soft Costs
 - 2. Stages of Design Estimates
 - a. Conceptual/Parametric Cost Model
 - b. Schematic
 - c. Design Development
 - d. Construction Documents
 - e. Change Order

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3. Design Cost Control Method
 4. Estimate Cost Drivers
 - iv. Working with an Estimator
 1. Deliverable Schedule
 2. Bids vs. Estimates
 3. Competition
 4. Bid Spreads
 5. CM vs. Cost Consultant Estimates
 6. Local Cost Escalations
 - v. Design Phase Cost Control Technical Paper
- Construction Trade Cost Development (Direct Work)
 - Unit Cost Development
 - Labor Costs/Labor Productivities
 - i. Prevailing Wage/Davis Bacon
 - ii. Union
 - iii. Non-Union
 - Material Costs
 - i. Neat
 - ii. Waste factor
 - iii. Vendor Quotes
 - Equipment Costs
 - i. Company owned
 - ii. Rental
 - Subcontractor Markups
 - i. Taxes/Insurances
 - ii. Overhead & profit

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- Construction Costs – Direct
 - Cost Source Data
 - i. Published Data
 - 1. RS Means
 - 2. Marshall & Swift
 - ii. Vendor Quotes
 - iii. In House Historical Data
 - 1. Reconciled Estimates
 - 2. Bid Results
 - 3. Project Actual Costs
 - Sample Trade Estimate
 - Work items
 - Units of measure
 - Assemblies

II. Session Two

- Review Previous Session Information
- Construction Indirect Costs
 - CM/GC General Conditions/General Requirements
 - General Conditions Budget/Monitor
 - CM/GC Fees
 - Insurances, Bonding (CM&Trade)
 - Contingencies
 - i. Design Development
 - ii. Construction
 - iii. Owner/Project
- Estimate/Budget Formats
 - CSI – 1995 Masterformat
 - CSI – 2004 Masterformat
 - Unifomat/Systems

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- Project Soft Costs/Owner Costs
 - i. Design/Engineering Fees
 - ii. Furniture/Fixtures & Equipment (FF&E)

- Estimating Software
 - i. Quantity Survey/Takeoff
 - 1. Software overview
 - 2. Software Demonstration
 - 3. Sample exercise – Foundation Wall Assembly
 - ii. Cost Estimating
 - 1. Software overview
 - 2. Software Demonstration

III. Session Three

- Review Previous Session Information
- Construction Cost Escalations/Methodology overview
- Special Requirements
- Work Breakdown Structures (WBS)
- Cost Index Data
 - Location
 - Market
 - International
 - i. Parity – US vs. other Country
 - ii. Exchange Rates
 - Cost vs. Selling Indexes
- Published Cost Indexes
 - i. ENR
 - 1. BCI – Building Cost Index
 - 2. CCI – Construction Cost Index

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- ii. RS Means
- iii. Faithful+Gould
- iv. Other indexes

- Indexing Sample Exercise
 - i. US vs. China
- Sample Completed Estimates
 - CSI & Unifomat
 - Estimate Summary - Direct Cost & Indirect markup's
 - Estimate Detail
 - Sample Estimate Exercise (Take Home)

IV. Session Four

- Review Previous Session Information
- Review Sample Estimate Exercise – Compare Estimates/Reconcile
- Defined Quantities Contracting/Bidding
 - i. Overview/Methodology Presentation
 - ii. Schedule of Values (SOV)
- Methods of Measurement review
 - i. Canadian Institute of Quantity Surveyors, 7th Edition
 - ii. CSI format
 - iii. Imperial & Metric
- Course summary
- Course Evaluations