

Construction Management - What When How

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Construction

- Involves – owners, designers, prime contractors, subcontractors & suppliers
- Has inherent risks
- Purpose of construction contract:
 - › Allocate duties between the parties
 - › Recognize and allocate risk to the different parties
 - › Reduce uncertainty & allow parties to plan
 - › Construction contracts can be verbal but enforcement becomes problematic

Construction Contracts

- Stipulated Price, CCDC 2-2008 (Design-Bid-Build)
- Standard prime contract between Owner and prime Contractor to perform the required work for a single, pre-determined fixed price or lump sum, regardless of the Contractor's actual costs
- When and Why:
 - › Scope well defined
 - › Tender & Construction documentation is complete
 - › Owner wants certainty in price and completion date

Construction Contracts

- Stipulated Price Contract for Trade Contractors on Construction Management Projects
 - CCDC 17 - 2010
 - Standard contract form between Owner and Trade Contractor to perform the Work for a single, pre-determined fixed price, regardless of the Trade Contractor's actual costs
 - Used where project is performed under the CCDC 5A CM method of contracting

Construction Contracts

- Unit Price Contract, CCDC 4 - 2011
 - Standard prime contract between Owner and prime Contractor to perform the required work for a pre-determined, fixed amount for each specified unit of work performed
 - Total price is determined by multiplying the unit price by the actual, measured quantity of work performed for each specified unit

Construction Contracts

- Cost Plus Contract, CCDC 3 - 1998
- Standard prime contract between Owner and prime Contractor to perform the required work on an actual-cost basis, plus a percentage or fixed fee which is applied to actual costs

Construction Contracts

- Design-Build Stipulated Price Contract CCDC 14 -2013
- Standard prime contract between Owner and Design-Builder
- Design-Builder performs Design Services and Construction under one agreement, for a single, pre-determined stipulated or fixed price

Construction Management

- One of three major project delivery systems - other two; Design-Bid-Build and Design-Build
- Type of contract defines relationship - less adversarial than Stipulated Sum contract
- Type of project delivery system is most important decision affecting project success
- Each of project delivery system has its pros & cons
- Best choice under right project preambles

What is it

- Owner contracts separately but somewhat simultaneously with a Design consultant and Construction Manager
- Construction Manager generally a construction firm early on board for input on constructability
- Under CM trade contracts may be sequential as design of specific elements is complete - fast-track
- CM also used without fast-tracking

What it is not

- CM not be confused with PM
- PM is overall management –
- Broader responsibility from inception to commissioning and warranty period Some firms may do both
- PM and CM not on the same project

When

- Project is complex
- Scope not well defined
- Time is critical
- Design is extraordinary
- Early unbiased advice on constructability, methods, costing and scheduling
- Rapidly changing market conditions (2008)

When not

- Debatable when no intent to fast-track
- Scope well defined
- No alternate design solutions required
- Owner does not want to share risks
- Adequate time and conditions to define scope fully

CM as Constructor

- CM enters into multiple trade contracts with trades similar to a GC under traditional method
- CM may provide Guaranteed Maximum price and a schedule under Cost Plus or Stipulated Sum - becomes CM at Risk

Cons over Design-Bid-Build

- Significant portions of total services not subject to competitive bidding
- No benefit of market rates
- Open-ended
- No incentive to minimize costs
- No incentive to complete sooner
- No commitment to cost estimates

Caution

- Guaranteed maximum price or Stipulated Price although attractive comes at a price as it includes *cushion* to cover risks that may or may not materialize

How – CM as Agent or Constructor

- CM acts as agent for a fee
- On Owner's behalf manages and coordinates trade contracts but Owner contracts directly (CCDC- 17)
- Owner contracts enters directly retains all inherent risks, acts as his own GC
- Agent may sign trade contracts on Owner's behalf without being a Constructor

How – CM as Agent

- CM for Services , CCDC 5A – 2010
- Contract between Owner and Construction Manager for Work is to be performed by Trade Contractors
- CM acts as limited agent of the Owner for advisory services and administers and oversees contracts between the Owner and Trade Contractors
- Owner assumes all risks

Cons of CM as Agent

- Owner assumes all contracting risks
- Owner assumes all risk of cost growth
- Owner assumes onerous admin burden due to large number of individual trade contracts – contract signing, payment, holdback, warranty

Cons of CM as Agent

- One time direct trade contracts with Owner-no benefit of previous relationship
- Cannot provide guaranteed maximum price
- Critical for Agent & PM to get along

CM as Constructor

- CM Contract – For Services and Construction, CCDC 5B - 2010
- Advisory services for pre-construction phase
- Perform Work during construction phase
- At the outset, Work is performed on an actual-cost basis, plus a percentage or fixed fee which is applied to actual costs
- May or may not perform work by his own forces

Supplementary Conditions

- To balance risks between Owner & CM
- Delineation of CM's authority
- Comprehensive description of Fixed Price, Reimbursable services & Mark ups
- Comprehensive description
- Scope of works by Own Forces

Supplementary Conditions

- Delineation of OHS responsibilities
- Trade contract protocol
- Alternate dispute resolution provisions

CM at Risk

· Process that allows a client to:

- Select a CM based on qualifications
- Make CM a member of a collaborative project team
- Centralize responsibility for construction under a single contract
- Obtain a bonded guaranteed maximum price

CM at Risk

- Produce more manageable, predictable project
- Save time and money and reduce risk for the client, the architect and the CM
- No standard CCDC contract, project specific contract - Hybrid of CCA 5A-2010 and CCDC 2-2008
- Additional fee to trigger CM at Risk

Fast Track

- Evaluate need early
- Assess risks
- Commit to undertake construction work when design not complete
- Much of work yet to be designed or bid
- Early decisions cast in concrete
- Rework to suit evolving design costly

Fast Track

- Owner must be in constant communications with design consultant
- Owner often forced to make critical decisions under extreme time pressures
- Independent PM vital to project success

How to Procure

- Best Value Method
- Low Bid method
- Hybrid
- Large projects seek legal advice
- Independent PM critical to process

RFP

- Minimize subjectivity
- Draft RFP carefully – most RFPs are ambiguous, repetitive and cumbersome
- Limit to number of pages – max 20
- Prescribe template
- Clear and concise evaluation criteria
- Specify number of to be prequalified

RFP Evaluation Criteria

- Fewer the better
- Fee Proposal
- Experience – no, size and type of projects
- Relevant & Specific experience
- Present workload and resources available
- Relevant personnel qualifications
- Safety record, program and certification

RFP Evaluation Criteria

- Financial strength & Bonding capacity
- Cost & Time management ability
- Ability to innovative, solve problems & value added design input
- Ability to cooperate & function – team player
- Administrative abilities

CM Remuneration

- Fixed Price & Cost plus components
- Fixed Price based on predetermined estimate plus overhead & profit
- Cost Reimbursement – with or without markup

·Balance of risk between fixed fee and cost reimbursable item

Work by CM's Own Forces

- Predetermined limited amount of work
- Inter-trade works - hoarding, temp heat, site office, power, water, security, hoisting, clean up, misc. cutting, patching, blocking etc.
- Based on cost reimbursable
- Not subject to competitive bidding
- Not more than 10% of total

**Questi
ons?**