A

Seminar report

On

# Construction Management

Submitted in partial fulfillment of the requirement for the award of degree
Of Civil

**SUBMITTED TO:**

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# Preface

I have made this report file on the topic **Construction Management;** I have tried my best to elucidate all the relevant detail to the topic to be included in the report. While in the beginning I have tried to give a general view about this topic.

My efforts and wholehearted co-corporation of each and everyone has ended on a successful note. I express my sincere gratitude to ……..who assisting me throughout the preparation of this topic. I thank him for providing me the reinforcement, confidence and most importantly the track for the topic whenever I needed it.

# Acknowledgement

I would like to thank respected Mr…….. and Mr. ……..for giving me such a wonderful opportunity to expand my knowledge for my own branch and giving me guidelines to present a seminar report. It helped me a lot to realize of what we study for.

Secondly, I would like to thank my parents who patiently helped me as i went through my work and helped to modify and eliminate some of the irrelevant or un-necessary stuffs.

Thirdly, I would like to thank my friends who helped me to make my work more organized and well-stacked till the end.

Next, I would thank Microsoft for developing such a wonderful tool like MS Word. It helped my work a lot to remain error-free.

Last but clearly not the least, I would thank The Almighty for giving me strength to complete my report on time.

**Introduction**

Whilst Construction Management (CM) has been out of favour over the last 5-6 risk-averse years, there appears to be signs of its return. Collette O'Shea, Managing Director for Land Securities in London recently quoted in Building Magazine (Issue 18) 2014 that she foresees a return to Construction Management despite the pricing risk for clients. She further added "if I had a project now and we were looking to procure it, then I suspect CM would be one of the routes we'd be considering.

With the increased activity in the development market, many developers are looking at alternative and creative ways to procure their developments and stay ahead of the competition. As construction prices continue to climb at an unprecedented rate, contractor's order books continue to fill and long lead-in periods for materials, Construction Management has never seemed so appealing.

**So what is Construction Management?**

Construction Management is a procurement approach whereby the CM undertakes to manage the Works through trade contractors, who are contracted to the client. Value is achieve through acceleration of the overall programme, increased ability to incorporate change to the design, involvement of specialist trade contractors in design and construction, and the creation of a collaborative project culture. As noted by the RICS, the CM is paid a fee as it was any other consultant to cover for its staff costs, and overheads, etc. As a member of the professional team the CM uses its experience to optimise costs and programming, shape buildability, coordinate procurement and manage design performance.

There are many advantages and disadvantages in adopting a CM approach, as acknowledged by Simon Rawlinson in Building Magazine (Issue 35) 2006:

**Services of Construction Management**

- **Project Preplanning/Programming Phase Services** - Such services may include: initial planning; feasibility studies; economic studies; site studies; environmental studies; site investigations; site surveys; preparation of budget and cost estimates; preparation of preliminary schedules; cost modeling and analysis; and cost control management.

- **Project Design Phase Services:** These services may include: design management; design technical reviews; code compliance reviews; constructability reviews; conducting/participating in Value Engineering workshops; analysis of Value Engineering proposals; preparation of cost estimates (including independent check estimates); cost analysis; cost control/monitoring; energy studies; utility studies; site investigations; site surveys; hazardous material surveys/analysis; scheduling (including preparation of schedules and schedule reviews); design problem resolution; review of design scope changes (including analysis of schedule impact);

scheduling/conducting/documenting design related meetings; participation in Time of Performance meetings to establish construction durations; participation in all "Partnering" activities during design (workshops, meetings, etc.);and performing market studies (material availability, contractor interest, etc.).

- **Project Procurement Phase Services**: These services may include: providing assistance to the Contracting Officer in contract procurement; answering bid/RFP questions; attending/participating in site visits; attending/participating in pre-bid conferences; preparing and issuing solicitation amendments; and performing cost/bid/proposal analysis.

- **Project Construction Phase Services.** These services may include: establishing temporary field offices; setting up job files, working folders, and record keeping systems; maintaining organized construction files; scheduling and conducting preconstruction meetings; handling/preparing project correspondence to respond to the parties involved with each project, confirm verbal discussions/directives, document actions taken and decisions made, etc.; preparing and maintaining daily dairies for project activities noting events affecting construction progress (weather, manpower, site equipment, work performed, etc.); monitoring the submittal review process including maintenance of submittal logs; review and monitoring of project schedules for construction progress with emphasis on milestone completion dates, phasing requirements, work flow, material deliveries, test dates, etc.; assisting in problem resolution and handling of disputed issues (including development of Government position, drafting final decision letter, etc.); maintaining marked up sets of project plans and specifications for future as-built drawings; performing routine inspections of construction as work proceeds, taking action to identify work that does not conform to the contract requirements, and notifying the contractors when work requires correction; compiling, through site inspections, lists of defects and omissions related to the work performed and providing these lists to the contractor for correction; review of construction contractor payment requests (including preparation of necessary forms for payment processing); monitoring project financial data and budgetary cost accounting (Maintain spread sheets indicating project fund allowances, obligations, payments, balances, planned expenditures, etc.); administration of construction contract change orders (issuing proposal requests, preparing cost estimates, reviewing cost proposals, assisting agency in negotiations, preparing change order packages for processing); scheduling, conducting, and documenting regular progress meetings with all interested parties to review project status, discuss problems, and resolve issues; scheduling, conducting, and documenting (prepare minutes, etc. for distribution) construction related project meetings; monitoring construction contractor compliance with established safety standards (note and report unsafe working conditions, failures to adhere to safety plan

required by construction contract); monitoring construction contractor's compliance with contract labor standards (including performing site labor interviews, collecting, reviewing, and maintaining weekly payrolls for all project contractors and subcontractors, reporting potential wage violations to Agency personnel); coordination of construction activities with customer Managers and occupying agency personnel; monitoring the design and construction clarification process and, when appropriate, reminding the A/E and other parties involved of the need for timely actions; participation in all "Partnering" activities during construction (workshops, meetings, etc.); preparing special reports and regular project status reports; providing for progress and/or final photographs of project work; perform site surveys**;** provide assistance in obtaining permits; perform hazardous material assessments and monitoring of hazardous material abatement work; and provide cost estimating assistance.

- **Commissioning Services**. These services shall include, but are not limited to, providing professional and technical expertise for start-up, calibration, and/or "certification" of a facility or operating systems within a facility. The CM must be able to provide any level of commissioning need from total support to specialty services. Commissioning services may require start-up planning, forecasting start-up duration, estimating start-up costs, determining start-up objectives, organizing start-up teams and team assignments, testing building system components, conducting performance tests, obtaining O&M material, plus conducting, scheduling and/or supervising O&M training. All such work must be authorized in advance by the Government. Small business subcontracting must be used to the extent agreed upon in the approved CM Subcontracting Plan and as otherwise practicable. When appropriate, such work will be required under the "Changes" Clause of this contract (new disciplines and work which are not itemized and priced in Section-B).

- **Testing Services:** The CM may be tasked to provide the services of an independent testing agency/laboratory to perform project specific quality control testing and inspection services. The services may include, but are not limited to, testing/inspection of soils, concrete, precast concrete connections, steel, steel decking, applied fireproofing, roofing, curtain walls/glazing, and elevator installations.

- **Claims Services.** The CM may be tasked to provide Claims Services when and as required by the Government for specific projects. The CM will review disputes and claims from the A-E and/or construction contractor(s) and render all assistance that the Government may require, including, but not limited to, the following:

- Furnishing reports with supporting information necessary to resolve disputes or defend against the claims.
- Preparation and assembly of appeal files.
- Participation in meetings or negotiations with claimants.
- Appearance in legal proceedings.
- Preparation of cost estimates for use in claims negotiations.
- Preparation of risk assessments/analyses relative to claim exposures.
- Preparation of findings of fact and any other documentation required by the Government.

- **Post Construction Services**. At or near substantial completion of project construction, the CM may be tasked to provide services such as:

  - Performing Post Occupancy Evaluations (POE's)
  - Assisting Agency in the formulation of lessons learned.
  - Providing occupancy planning including development of move schedules, cost estimates, inventory lists, etc.
  - Providing move coordination, relocation assistance, and/or furniture coordination.
  - Providing telecommunication and computer coordination.
  - Post Construction services will be obtained using the extended contract Man Hour Rates (Section B) where applicable. Services for which pricing has not been established will be procured under the "Changes" clause.

- **General Services.** During the life of the contract, the CM may be tasked to provide services not related to a specific project. Such work must be authorized in advance by the Government. These services may include, but are not limited to:

  1) Developing, updating, and reviewing Agency Service handbooks, guides, manuals, and/or policies. When required to support work being performed under any of the major Project Phases, the Government may authorize

Additional Services such as those listed below.

2) Providing special consultant or special inspection services, such as assessments of hazardous materials, an Industrial Hygienist to monitor removal of hazardous material, a historic preservation consultant to review historically significant matters in existing buildings, etc.

3) Performing special studies and/or updates to prior studies.

4) Performing other specialized services such as updates to master or environmental plans, interior space planning, existing site surveys, site models, etc.

5) Providing tenant relocation and moving services at facilities other than those associated with a specific project.

6) Providing photographic records beyond the normal scope of presentation and inspection services required.

7) Providing expertise as required in unusual situations from specialty disciplines, such as expert testimony for hearings, etc.

**Types of Construction Management**

 **Agricultural:** Typically economical buildings, and other improvements, for agricultural purposes. Examples include barns, equipment and animal sheds, specialized fencing, storage silos and elevators, and water supply and drains such as wells, tanks, and ditches.
 **Residential:** Residential construction includes houses, apartments, townhouses, and other smaller, low-rise housing types.
 **Commercial:** This refers to construction for the needs of private commerce, trade, and services. Examples include office buildings, "big box" stores, shopping centers and malls, warehouses, banks, theaters, casinos, resorts, golf courses, and larger residential structures such as high-rise hotels and condominiums.
 **Institutional:** This category is for the needs of government and other public organizations. Examples include schools, fire and police stations, libraries, museums, dormitories, research buildings, hospitals, transportation terminals, some military facilities, and governmental buildings.
 **Industrial:** Buildings and other constructed items used for storage and product production, including chemical and power plants, steel mills, oil refineries and platforms, manufacturing plants, pipelines, and seaports.
 **Heavy civil:** The construction of transportation infrastructure such as roads, bridges, railroads, tunnels, airports, and fortified military facilities. Dams are also included, but most other water-related infrastructure is considered environmental.

 **Environmental:** Environmental construction was part of heavy civil, but is now separate, dealing with projects that improve the environment. Some examples are water and wastewater treatment plants, sanitary and storm sewers, solid waste management, and air pollution control.

**Advantages**

- Accelerated programme overlapping design and construction
- Ability to closely manage cost during design and procurement
- Proactive management of the design and construction process to minimise impact of change and other causes of disruption
- Hands-on involvement of the client on the project
- Professional team including the construction manager focused on meeting client's needs and integration of design and construction skills
- Full control over design including incorporation of design by specialist contractors
- Early appointment of construction advisers and specialist trade contractors
- Ability of client to influence the selection of trade contractors
- One-to-one contractual relationships
- Management focus on programme, sequencing and buildability
- Client ownership of tendering and contractual arrangements
- Opportunity to package the work to suit the capability of the trade contractors and manage on-site interfaces
- Ability to identify and act upon poor trade contractor performance

**Disadvantages**

- Design co-ordination risk and increased likelihood of design change
- No cost certainty until all packages are let and no single point lump-sum cost commitment
- Exposure to risk associated with construction manager and team performance. Reliance on the capability of construction manager and project team to correctly forecast consequences of change. Responsibility to fund solutions to problems should they occur
- Increased administration role for the client
- CM and professional team owe duty of care liability only
- High degree of client ownership of risks associated with design including impacts of late or incomplete and uncoordinated design
- Added complexity of one to one contractual relationships of client with all team members
- Reliance on management capability of construction manager
- Client position at centre of management requires effective decision-making
- Client exposure to performance risk and exposure to consequential loss associated with trade contractor default.

**Summary**

Clients embarking on a Construction Management journey can expect better control of costs during the process through the expertise of the CM and contractual relationship with trade contractors. This said, the client retains the contract risk of non-performance and requires the client to have the ability to enter into multiple contracts and make payments to each.

Design can be controlled and change incorporated more easily. Through the CM's buildability knowledge and control of design performance a better quality should be realised.

Programming is also an advantage to the client due to the integration of the design process with the construction process, thus reducing the lead-in period before commencement.

## Reference

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- www.studymafia.org
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