

AMERICAN UNIVERSITY OF BEIRUT
FACULTY OF ENGINEERING AND
ARCHITECTURE

CIVE 580 / ENMG 502
CONSTRUCTION MANAGEMENT
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Sample Exam Questions

A “real” case calling for your advice

1. AUB is soon to launch a competition for the concept design of the new building to house FEA’s engineering laboratories. The implementation of this building within the shortest possible time will make it possible to proceed with the rehabilitation of Bechtel Building right afterwards. Competition is to be open to selected international/local architectural firms. AUB is currently delivering the SRB Project under the Design-Build approach and has adopted the traditional approach with a PM for construction contract administration for the HSSC and OSB Projects.
 - a) Rank the project organizational structures and their associated types of construction contract that can be deemed viable for this new project.
 - b) Clearly states the major reason that hinders the adoption of the design-build approach.
 - c) Clearly states the major reason that classifies the adoption of the traditional approach under a cost-plus with a GM contract as less desirable compared to other possible approaches .

A “real” case calling for your advice

1. Answer: (10 points)
 - a) Organizational structures
 1. CM – phased approach (LS & UP trade contracts)
 2. Traditional approach (GC: C+ with a GM)
 3. DB on LS basis
 4. Traditional, GC on a LS or UP (with a PM from the start of design)
 - b) DB hindrance
How do you force a teaming-up between foreign architects and local contractors?
 - c) C+ with GM hindrance
Too aggressive for a non-for-profit type institution

The Go-Ahead Decision

2. Proceeding beyond the pre-project planning/conceptual phase:
 - a) Indicates that the Client has avoided all the risks of project failure.
 - b) Reflects that the funds for design development have not been secured.
 - c) Indicates that the project idea has been validated.
 - d) Any combination of the above

Interaction among Phases

3. In relation to the design, construction, and operation phases:
- a) All phases are traditionally undertaken in a sequential manner.
 - b) Design thinking is independent from construction and operation thinking.
 - c) From design perspective, construction thinking is more important than operation thinking.
 - d) Any combination of the above _____.
 - e) None of the above.

Supervision of Construction

4. Supervision of works execution as exercised by the Contractor's staff precludes the need for an inspection of completed works by the supervising Architect/Engineer.
- a) True.
 - b) **False.**

Role of the PM

5. Construction contract administration:
- a) Mainly involves dealing with time- and cost-related issues .
 - b) May involve dealing with issues related to the quality of accomplished works.
 - c) **Both of the above.**
 - d) None of the above.

Progress Control

6. Control, as a function, can be exercised effectively regardless of the extent of planning and scheduling undertaken.
- a) True.
 - b) **False.**

A/E versus PM

7. Appropriating the construction supervision functions to both an A/E office and a PM office is meant to:
- a) Avoid the inevitable partiality of the A/E.
 - b) Enhance the contract administration process.
 - c) Facilitate communication among involved parties.
 - d) Any combination of the above: b & c.
 - e) All of the above.
 - f) None of the above.

The Phased Approach

8. Under the appointment of a Construction Manager (and in comparison with the traditional project delivery approach):
- a) The construction budget and duration cannot be set.
 - b) The construction budget and duration cannot normally be guaranteed.
 - c) Construction duration reduction is highly possible.
 - d) An overall design-construction duration reduction is highly possible.
 - e) Any combination of the above: b & d.
 - f) All of the above.

The DB Approach

9. By resorting to the design-build delivery approach, the Client can completely avoid the appointment of an A/E consultant and/or a PM consultant.
- a) True.
 - b) **False.**

The LS Contract

10. The lump sum contract does not guarantee the Client the lowest possible construction cost.
- a) True.
 - b) False.

The UP Contract

11. The re-measured contract is desirable to contractors since it allows a complete shifting of project risks to the Client.
- a) True.
 - b) **False.**

The C+ Contract

12. The cost-plus-a-fee with a guaranteed maximum contract resembles the lump sum contract in that:
- a) Project risks are allocated in a similar manner.
 - b) The Client is, in a way, guaranteed an upper bound for the cost of construction.
 - c) It gives an opportunity for the contractor to have a higher profitability.
 - d) Any combination of the above _____.
 - e) None of the above.

Budget Control

13. The project's construction budget is to be maintained by the A/E through:
- a) Periodic re-estimation of cost.
 - b) Exercising good value engineering practices.
 - c) Favoring initial cost reductions over life-cycle considerations.
 - d) Any combination of the above: a & b.
 - e) None of the above.

Accounting for Constructability

14. Construction expertise is “best” injected into design thinking through:
- a) The A/E’s acquired construction knowledge.
 - b) The PM/CM construction background.
 - c) Engaging the Contractor before (or soon after) the design phase starts.

Constructability?

15. Observing the issue of constructability means:
- a) The design can be easily constructable.
 - b) The design can be economically constructable.
 - c) The design drawings are deemed acceptable in terms of the level of construction details shown.
 - d) The designer is the constructor.
 - e) All of the above.
 - f) **Any combination of the above: a, b, & c.**

PM's Role

16. Draft four Client-PM Agreement's requirements describing the PM's role in administrating the Client-A/E Agreement:
- 1) The PM shall closely monitor the advancement in the design progress achieved by the A/E with the aim of ensuring that all interim and final milestones are met.
 - 2) The PM shall ensure that the A/E examine alternative design solutions leading to the selection of systems that are viable from a life-cycle costing perspective.
 - 3) The PM shall cause the A/E to undertake periodical reviews of construction cost and review the same with the aim of maintaining the budget set by the Client.
 - 4) The PM shall be responsible for reviewing all interim and final design deliverables for completeness and compliance with Agreement requirements.

Engineer's Estimate

17. If Mean-EE > 0 , then:
- a) The Engineer might have under-priced the project
 - b) The Engineer might have over-priced the project
 - c) The Engineer has to revisit the design
 - d) The Engineer has given a reasonable estimate of construction cost

Bid Prices Distribution

18. IF Mean-Median > 0 , then:
- a) There is a potential outlier at lower end of distribution.
 - b) There is a potential outlier at higher end of distribution.
 - c) The distribution may be symmetrical.
 - d) No meaningful information can be drawn .

Unbalancing

19. Bid unbalancing carried out on the basis of "a speculation on quantity" always results in bid "front-loading":
- a) True.
 - b) **False.**
 - c) Not able to judge.