

THE OPEN UNIVERSITY OF SRI LANKA
 Post-graduate Diploma / Stand alone Courses in
 Construction Management
 Final Examination – 2006
 CEX 7109 / CEE 7109 / CEP 2109 – Management of the
 Design Phase & Quality Control
 Duration: **Three Hours**
 Date: Friday 23rd March 2007



Time: 0930 – 1230 hours

Answer four (4) questions selecting at least one (1) question from section B.

Please write the answers to SECTIONS A and B in TWO SEPARATE BOOKS.

SECTION A

Note: Use relevant field examples where necessary to clarify your answers.

1. a) If you are the Design Team Leader for a major project, *explain three* project requirements you would clarify with the client in order to decide on the design management strategy, clearly explaining the implications of requirements on strategy to be adopted. (13 marks)
- b) *Discuss* the use of pre-qualification of contractors and criteria for evaluation in your field of construction. (6 marks)
- c) *Describe* the different methods for specifying materials and equipment, giving relevant examples from your field of construction to clarify your answer. (6 marks)

2. a) *Discuss* the information that should be contained in the consolidated brief which would be given as a client report before the scheme design is frozen and detail design commenced. (9 marks)
- b) *Discuss* the need for controlling and managing change during the design and construction phases of a project and the strategies that should be adopted to safeguard quality and client interest. (8 marks)
- c) *Briefly describe* the different stages and actions taken in Tender Evaluation. (8 marks)

3. a) *Discuss* with relevant examples, what conditions would favour the use of a Design and Build type contract and what steps should be taken to safeguard client interest, financial and otherwise. (9 marks)
- b) *Explain* what you understand by Cost Planning in the design phase of a project and its use in managing quality. (9 marks)
- c) *Explain* what you understand by Life Cycle Costing and discuss implications for Environmental Impact Assessment and Sustainable development. (7 marks)

4. a) Briefly outline the objectives of the conceptual stage of a project design and discuss if and how they affect the quality of a project. (8 marks)
- b) *Explain briefly* what you understand by 'validation' of design input and 'verification' of design output in the design of a project, and the function of Design Reviews. (10 marks)

- c) *State* the methods for selection of consultants for a project and *describe* a method which considers both quality and cost. (7 marks)

SECTION B

5. a) "Conformance to specifications" could be considered as an acceptable definition for achieving quality in construction contracts. However, even if the contractor conforms to all specifications applicable to a given contract, this might not necessarily lead to "Client satisfaction". Discuss. (8 marks)
- b) Describe briefly how the quality of the Works could be assured in a "Design and Build" contract, where both design and construction are both carried out by the Contractor. (8 marks)
- c) List the Contract Documents in a traditional construction contract that define the quality of the Works. If the Consultant requests the Contractor to carry out certain tests that are not specified in the Contract Documents to check the quality of the Works, discuss briefly who should pay for such additional tests. (9 marks)
6. a) Briefly describe the following quality requirements given in ISO 9001: 2000 Quality Management System Standards:
(i) Purchasing
(ii) Resource Management
(iii) Control of Documents (9 marks)
- b) Inspection and Testing could be used to identify the defects or non-conformances in the Works. However, just rectification of such defects or non-conformances does not lead to improvement of the construction processes used by the Contractor. In your opinion what actions (according to the ISO 9001 Standards) should the Contractor take in order to prevent the recurrence of non-conformances? Discuss. (7 marks)
- c) Any contractor who has implemented a quality management system to ISO 9001 in his organisation should develop a Quality Plan for each and every project undertaken by him. Briefly describe how you would develop such a 'project quality plan' and its contents. (9 marks)