

PRINCIPLES OF DESIGN AND CONSTRUCTION (21CVP322)

Semester 1 2021-22

(1b) Exam paper

This is a (1b) online examination, meaning you have a total of **3 hours plus additional 30 minutes** to complete and submit this paper. The additional 30 minutes are for downloading the paper and uploading your answers when you have finished. If you have extra time or rest breaks as part of a Reasonable Adjustment, you will have further additional time as indicated on your exam timetable.

It is your responsibility to submit your work by the deadline for this examination. You must make sure you leave yourself enough time to do so.

It is also your responsibility to check that you have submitted the correct file.

Exam Help

If you are experiencing difficulties in accessing or uploading files during the exam period you should contact the exam helpdesk. For urgent queries please call **01509 222900**. For other queries email examhelp@lboro.ac.uk

You may handwrite and/or word process your answers, as you see fit.

Answer **THREE** questions.

All questions carry equal marks.

-
1. (a) Imagine that you work for a large general contractor which specialises in complex, international projects. What arguments would you make to convince your manager to pay for you to attend a professional design management training course.
[10 marks]
 - (b) Critically discuss the various theories of design which emerged in recent decades and identify which one(s) most accurately describe(s) built environment design practice in today's digitally transformed construction industry.
[23 marks]

Continues/...

.../continued

2. (a) Estimating and tendering represent a key phase of the pre-construction stage. Clients and / or project managers may adopt different methods for tendering depending on various factors. Critically discuss four types of tendering methods showing their main characteristics and advantages or disadvantages. [16 marks]
- (b) Once the contractor takes the decision to tender for a project, the estimators should gain full understanding of the project through the “project appreciation stage”. Visiting the site is a very important step at this stage. Critically discuss the main aspects of the site, the surrounding area and local conditions which the estimating team needs to examine in order to minimise risk and to produce an accurate estimate. [17 marks]
3. (a) Discuss the relevance of having Project Process Frameworks such as for planning construction projects. Government advisors are considering amalgamating all Project Process Frameworks into one generic framework. Provide a discussion on whether this is a good idea or not. Justify your views. [10 marks]
- (b) Critically explain the portfolio of programming techniques available to construction project managers. For each technique, discuss the scope of its use, the deliverables, its advantages and disadvantages. [12 marks]
- (c) Critically discuss the main elements of Lean Construction. Debate the relationship between Lean Construction planning and traditional programming techniques. [11 marks]
4. (a) The intensity of the planning effort varies over a project’s lifecycle. Giving an example, explain how this intensity varies and the role of key stakeholder during these lifecycle phases. [11 marks]
- (b) Critically discuss the importance of resource analysis in both design and construction firms. [11 marks]
- (c) Explain the importance of monitoring and control on construction projects. Critically discuss the tools that can be used, how they are used and what they deliver. [11 marks]

P Demian, T Hassan, P Carrillo