Modern Methods of Construction and Conservation
23CVC127

This examination is to take place in-person at a central University venue under exam conditions. The standard length of time for this paper is **2 hours**.

You will not be able to leave the exam hall for the first 30 or final 15 minutes of your exam. Your invigilator will collect your exam paper when you have finished.

Help during the exam

Invigilators are not able to answer queries about the content of your exam paper. Instead, please make a note of your query in your answer script to be considered during the marking process.

If you feel unwell, please raise your hand so that an invigilator can assist you.

You may **not** use a calculator for this exam.

Answer **THREE** questions.

All questions carry equal marks.

1. a) Compare and contrast the *three* main aspects of industrialisation and the overall context in which they should operate to maximise the benefits, providing a reasoned example for each from construction for each aspect.

    [13 marks]

    b) Explain how the different terms for construction industrialisation (prefabrication) in the UK have changed over recent decades.

    [5 marks]

    c) What are the main benefits and drawbacks of standardisation?

    [9 marks]

    d) Describe how the boom-and-bust cycle typical in the construction sector can affect the time/cost/quality, take up and continuity of offsite construction.

    [6 marks]

2. a) The Sarah Slaughter paper (2000) identifies five categories of construction innovation. Describe these categories, providing examples from construction to illustrate your answer.

    [25 marks]

    b) It is often said that we should build our houses like we make cars – Discuss the main problems with this analogy.

    [4 marks]

    c) Both the car industry and construction use platforms. Explain the similarities and differences between the two sectors regards their platform approach.

    [4 marks]

Q3 & Q4 are based upon the following scenario:
You have been commissioned to undertake a full building survey of a substantial early Victorian town house together with associated out buildings. Upon initial investigation you surmise that there have been several earlier attempts at refurbishment and renovation making reasonable assumptions regarding the form of construction and defects which are likely to be encountered:

3.   a)   With the aid of annotated graphs illustrate to the Client:

   i)   The range of interventions available in light of its obsolescence
   ii)   The influence of maintenance and adaptation on declining performance
   iii)   The maintenance see-saw hypothesis.

[15 marks]

   b)   The roof structure and covering on the property shows signs of dilapidation:

   i)   Describe to the Client the potential causes of roofing defects.
   ii)   Discuss why some remedial methods may not always provide the best solutions.
   iii)   Outline the best approach to help reduce potential defects and failure of the roof.

[18 marks]

4.   a)   Discuss the range of potential masonry defects you could expect to find in the town house including remedial action and describe the crack classification guide which you would apply.

[17 marks]

   b)   In addition to the masonry defects, initial timber samples have indicated '*Serpula lacrymans'* infestation to a substantial proportion of the wood floor and wall panels. Discuss the likely damage, habitat, characteristics, and the remedial treatment for this outbreak.

[16 marks]

C Goodier
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