ENG85

UNIVERSITY OF BOLTON

SCHOOL OF ENGINEERING

BSc CONSTRUCTION PROJECT MANAGEMENT

SEMESTER TWO EXAMINATION 2024/2025

SUSTAINBLE CONSTRUCTION

MODULE NO: CAS6004

Date: Thursday 15th May 2025 **Time: 2:00 – 4:00pm**

INSTRUCTIONS TO CANDIDATES:

There are SIX questions.

Answer ANY FOUR questions.

Marks for parts of questions are shown in brackets.

This Examination paper carries a total of 100 marks.

School of Engineering
BSc (Hons) Construction Project Management
Semester Two Examination 2024/25
Sustainable Construction
Module No. CAS6004

Students to answer any FOUR of SIX questions (each question 25 marks)

1. BIM plays a significant role in promoting sustainability in construction by improving efficiency, reducing waste, and enhancing lifecycle management. Critically evaluate how BIM can contribute to sustainable construction practices, particularly in the context of heritage buildings.

(25 marks)

2. Sustainable development is often associated with new construction, but heritage conservation also plays a crucial role. Discuss how maintaining and repurposing historic buildings aligns with sustainability principles and contributes to environmental, economic, and social sustainability.

(25 marks)

3. Heritage sites often face constraints when adopting modern sustainable practices due to legal, structural, and aesthetic considerations. Critically assess the challenges associated with implementing sustainable solutions in heritage sites and propose innovative strategies to overcome them.

(25 marks)

4. The construction industry is one of the largest contributors to global waste production. Using the principles of a circular economy, critically analyse how construction waste can be minimised while balancing sustainability goals with economic viability. Provide examples of best practices in the industry.

(25 marks)

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5. Life Cycle Assessment (LCA) is an essential tool in evaluating the environmental impact of a building over its entire lifespan. Examine how BIM can be integrated with LCA to enhance sustainability in the construction sector and assess the long-term benefits of this approach.

(25 marks)

6. The UK government and international organisations have introduced policies and frameworks to promote sustainable construction, such as the National Planning Policy Framework (NPPF) and the Environment Act 2021. Critically evaluate whether current policies and regulations are sufficient in driving sustainability in construction, particularly for heritage sites. Suggest improvements where necessary.

(25 marks)

END OF PAPER