

The Papua New Guinea University of Technology
Department of Architecture and Construction Management
Second Semester, 2021

AR 372 – Ecologically Sustainable Development

Date: Monday 25th October 2021
Time: 8.20am
Room: ST1
Duration: 3 Hours

Instructions to Candidates:

- 1.0 You have 10 minutes to read the paper
You must not begin writing during this time
- 2.0 All answers must be written on the answer book (s) provided
- 3.0 Print your name and student identification number on the answer book (s) provided
Do it now
- 4.0 No reference material is allowed in the examination room
- 5.0 No mobile phones allowed
- 6.0 Attempt All Questions

Question No.1 (3 marks)

Carbon emissions is one factor that is at the heart of the climate-change problem. Explain how architects can assist in addressing this problem.

Question No.2 (5 marks)

- (a) What is Ecologically Sustainable Development? (2 marks)
- (b) When sustainable development is discussed in general, it is normally discussed in reference to the triple bottom line (economic, social, and environment). Briefly discuss why this is normally the case (3 marks)

Question No.3 (6 marks)

- (a) Give the correct descriptions for the following acronyms given below (3 marks)
- (b) State the country responsible for creating the green rating scheme given below (3 marks):

- (i) LEED
- (ii) BREEAM
- (iii) CASBEE

Question No.4 (3 marks)

Explain the following concepts:

- (a) integrated building design
- (b) low embodied energy
- (c) life cycle assessment

Question No.5 (4 marks)

The building design and construction process can involve the following stages:

- (i) Pre-design
- (ii) Concept design
- (iii) Final design
- (iv) Construction management

Suggest strategies the architect can use in promoting ESD practices in each of the stages given above.