



**UTHM**  
Universiti Tun Hussein Onn Malaysia

**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
SEMESTER I  
SESSION 2019/2020**

COURSE NAME : SUSTAINABLE CONSTRUCTION  
COURSE CODE : BPD 35103 / BPF 44103  
PROGRAMME CODE : BPC  
EXAMINATION DATE : DECEMBER 2019 / JANUARY 2020  
DURATION : 3 HOURS  
INSTRUCTION : ANSWER ALL QUESTIONS

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THIS QUESTION PAPER CONSISTS OF **FOUR (4)** PAGES

**Q1** “PETALING JAYA: Government officials are said to be working on a proposal for all government buildings to be certified fit for occupation, as is currently the practice with private buildings which must obtain a certificate of completion and compliance (CCC).

Deputy Housing and Local Government Minister Raja Kamarul Bahrin Shah said the idea is only a working proposal at the moment, but that he believes the same standards should apply to all buildings.

For private buildings, the CCC is issued by the project’s principal submitting person, that is the professional architect, engineer or building draftsman who submits his plans to the local authority.

Raja Kamarul said while the construction of government buildings comes under the Public Works Department, some projects involve third-party consultants who comply with the CCC requirement to protect their interests.

He acknowledged that there are many criteria involved in obtaining the certificate, including complying with regulations on fire safety, health, ventilation, building specifications and road setbacks, among others. That’s why it’s understandable why some older buildings cannot obtain a CCC, for example pre-war shops.

Nevertheless, he said, the Pakatan Harapan government is pushing for all buildings to obtain the certificate. He added however that there is no fixed time frame for achieving this due to the complex nature of getting a CCC.

It has to be done on a case-by-case basis.”

*Source: Free Malaysia Today News (June 10, 2019)*

Demonstrate **SIX (6)** steps process of Certificate of Compliance and Completion (“CCC”) application required by Uniform Building By-Law 1984 (UBBL).

(30 marks)

**Q2** Life-cycle concepts, in the context of the building and construction sector, are particularly suited to analysis of building products. Such products play an essential role in increasing the energy efficiency of buildings and contributing to economic prosperity. It has been estimated that the construction sector is responsible for up to half of material resources taken from nature and of total waste generation. To manage and minimize the impacts of construction products, the impacts have to be measured using a life-cycle approach. This article reviews lifecycle concepts and considers recent developments. Materials and sustainable construction, environmental product declarations, embodied energy and differences encountered in the assessment of construction products in the developed and developing countries are among the topics addressed.

*Source: Niklaus Kohler & Sebastian Moffatt (2013)*

- (a) Differentiate **THREE (3)** contexts of construction products in developed and developing countries. (15 marks)
- (b) Discuss green procurement in Life Cycle Assessment (LCA) concept. (10 marks)

**Q3** Resource depletion is the most pressing overall concern related to the built environment. Determined policy development is needed to address this concern. Policies aimed at specific issues are not enough; a shift to “dematerialization” is required. Developing countries face particular barriers regarding policies on the built environment. In some countries of both the developed and developing worlds, promising steps are being taken, but to deal with consequences such as the rebound effect will require strong supranational efforts.

*Source: FIDIC (2018)*

Compare **FOUR (4)** barriers among developing worlds in the promoting sustainable construction.

(25 marks)

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- Q4** Indoor Environmental Quality (IEQ) encompasses the conditions inside a building, which are air quality, lighting, thermal conditions, ergonomics and their effects on occupants or residents. Strategies for addressing IEQ include those that protect human health, improve quality of life, and reduce stress and potential injuries. Better indoor environmental quality can enhance the lives of building occupants, increase the resale value of the building, and reduce liability for building owners.

Propose **FOUR (4)** effective strategies improving occupants' comfort.

(20 marks)

- END OF QUESTIONS -

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