NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF ARCHITECTURE AND QUANTITY SURVEYING

DEPARTMENT OF ARCHITECTURE
BACHELOR OF ARCHITECTURAL STUDIES (HONOURS) DEGREE

PART II SUPPLEMENTARY EXAMINATIONS – JULY 2003
AAR 2102 – BUILDING CONSTRUCTION I

Instructions   *Time* : **3 Hours**

1.   Answer *ALL Questions*
2.   All Questions carry equal marks (25)
3.   Illustrate your answers using clearly annotated drawings where appropriate.

QUESTION 1

a)   Using the case of a two storey building discuss the basic principles which guide the design and construction of a suspended concrete floor.

b)   Draw a typical section through the 2 storey building to illustrate the structural inter – relationships between the reinforced concrete floor slabs and beams, the door and window lintels, etc. Assume brick material for the wall construction.

QUESTION 2

a)   Explain to a prospective private developer the factors he/she should consider and why, in the process of procurement of an ideal site for a residential building project.

b)   Describe the design and construction of the short- bored pile foundation. In what site conditions is it best recommended and why?

QUESTION 3

a)   The structure of the timber roof trusses and the sizes of its members is a function of the span of the space to be roofed; discuss this fact in detail.

b)   A one-story rectangular warehouse is of size 48m x 96m. Propose a timber truss structure for roofing the building. Assume a structural column grid of 12m x 12m internally.

QUESTION 4

Give a detailed description of the construction of a semi-submerged basement space with all necessary measures for eliminating underground water seepage and vapour accumulation.