

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF THE BUILT ENVIRONMENT

DEPARTMENT OF ARCHITECTURE
BACHELOR OF ARCHITECTURAL STUDIES (HONOURS) DEGREE

PART III –FIRST SEMESTER EXAMINATION – DECEMBER 2013
2013-2014 ACADEMIC YEAR

AAR 3108 – BUILDING CONSTRUCTION III

Instructions

Duration: 4 Hours

Answer all Questions.

Answer Question 1 on an A1 sheet/s of paper.

Total Marks: 100

Question 1

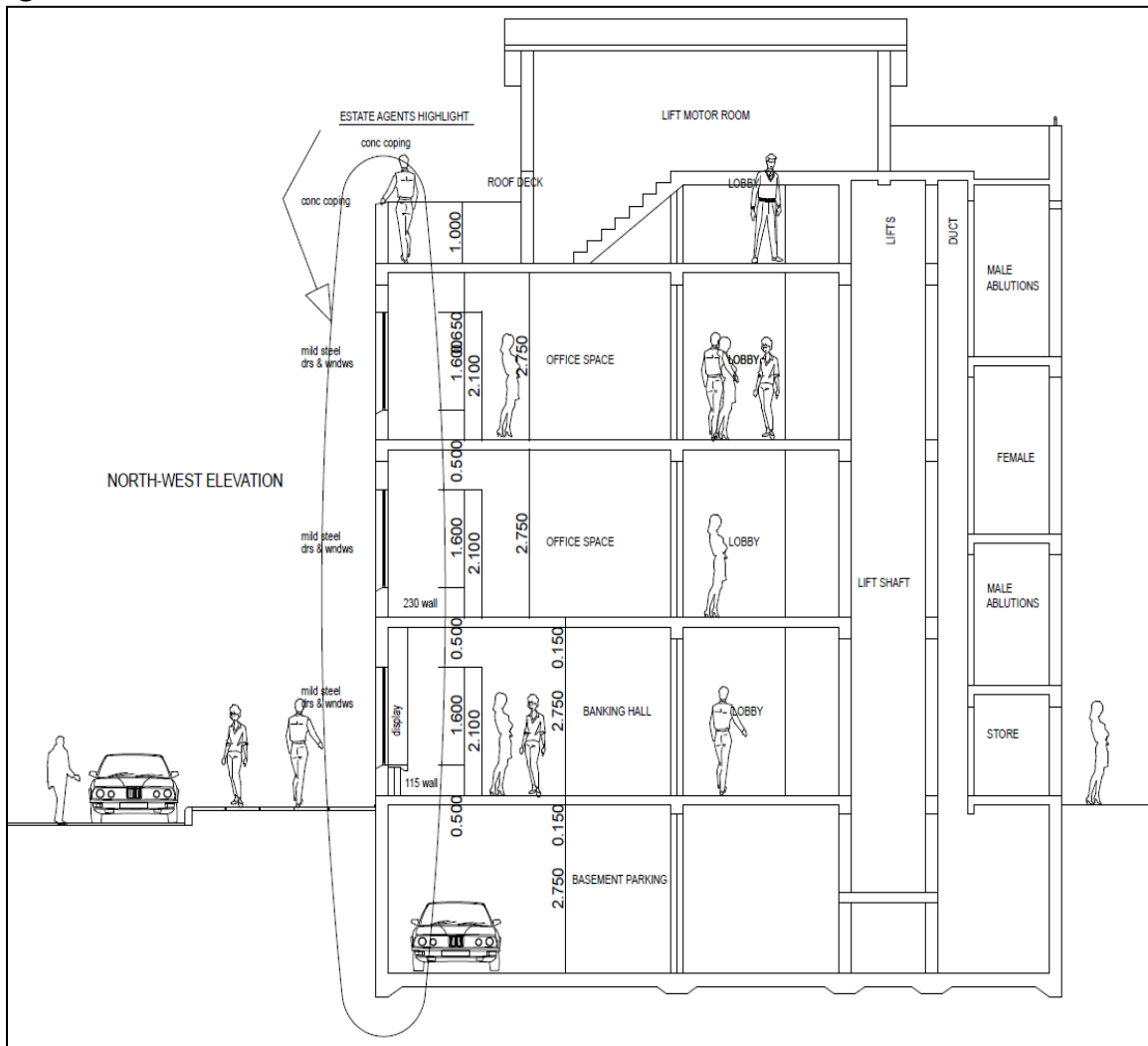


Figure 1. Schematic section of an office building

A client who wants to invest his money in constructing an office building has approached you with a schematic section (*Figure 1*) which was done by another Architect who has now since referred the client to you. The Architect who instructed the client to approach you seems to have mentioned the words dpm, dpc and tanking hence the client now wants an insight into these words.

(a) Draw using the scale 1:50 the part section highlighted showing the locations of the waterproofing. (20 marks)

(b) Reproduce five relevant blown-up details using scale 1:10 or 1:5. (20 marks)

(40 marks)

Question 2

a) Define Demolition? (2)

b) What do you consider in determining the demolition method to employ? (8)

c) Explain the favourable conditions under which the demolition method of stripping out can be used. (4)

d) Use sketches to explain temporary support with maintenance jacking (6)

[20]

Question 3

a) What is a deep foundation system and give an example? (4)

b) Explain situations that require the use of deep foundation systems (8)

c) Using sketches explain the difference between displacement and replacement piles. (8)

[20]

Question 4

- a) What factors determine the choice of concrete formwork? (6)
- b) Which other materials can be used for concrete formwork other than steel and timber? (3)
- c) Summarize the key characteristics of one of the materials you stated in the question above (*question 4b*) (3)
- d) Explain the causes of formwork failure in construction. (7)

[20]