The University of Melbourne

Semester Two, 2002
Faculty of Architecture, Building and Planning

Subject Number: 702-361 **Student Number:**_____

Subject Title: Construction Cost Management

Reading Time: 15 minutes

Exam Duration: 2 hours

This paper has **5 pages**

Authorised Materials:
The following items are authorised:

Electronic calculator

Instructions to Invigilators:
Students should be issued with a university exam book

The examination paper is to remain in the examination room. The examination paper should be printed with a pink cover page

Instructions to Students:

Students must complete all questions; the total mark possible is 100 marks

This paper is to be held by the Baillieu Library.

Question 1 - Preliminary Cost Planning

(24 marks)

Prepare a preliminary cost plan for a new office building in Box Hill. The latest cost data available relates to a similar building in South Melbourne. The two buildings were similar except for the following:

- Ground conditions for the South Melbourne building required special piling to be undertaken, this is not expected to occur in Box Hill
- The floor finish in South Melbourne was carpet, and the finish in Box Hill will be vinyl or carpet tiles

Building Cost Data - South Melbourne

Total cost	$1,200,000 (including piling cost of $150,000)
GFA	1500 m2
Carpet Finish	$60,000 (1,000m2)
Building Price index = 108 (BPI)	

Proposed Building - Box Hill

GFA	2000 m2
Vinyl Finish	$40/m2 (for 1800m2) (@BPI 120)
or Carpet Tiles	$70/m2 (for 1800m2) (@BPI 120)
Expected Building Price index = 120	

Answer the following questions:	Answer
1. What is the total cost of the new building (using vinyl)?	$
2. Which is the percentage difference between the two locations (using vinyl)?	%
3. Is it more expensive than a High-rise Office built at BPI 90, at $1200/m2/GFA (using vinyl)?	Y or N
4. How much more would the new building cost if piling was required (using vinyl) (%)	%
5. What is the total cost of the new building if it were built in Geelong (using vinyl) (Location Index 105)	$
6. What would the building cost ($/GFA), if carpet tiles were used instead of vinyl?	$/GFA

All calculations should be shown in your answer booklets.

Question 2 – Multiple Choice

(24 marks)

Please circle the best answer (Please circle)

i) The most cost efficient building height are those that are :

A Low rise 2-3 storey
B High rise 20-30 storey
C Single storey only
D Any height building, cost increases with floor area.

ii) The most cost efficient building shape are those that are :

A As close to square as possible
B Rectagular buildings.
C L- shaped buildings
D U - shaped buildings

iii) The most cost efficient internal planning are those that have :

A Corridors that are straight
B Corridors that are U-shaped
C Corridors that mimimise the area used
D None of the above.

iv) The most cost efficient roof costruction method are those that are :

A Natural roof materials like slate
B Light weight roof materials like corrugated steel
C Any material provided it prevents the entry of water
D A and C but not B above.

v) A building's "Value" can be described as :

A The maximum price the market will derive for the building
B The price of the factors of production used to construct the building
C The dollar amount of a bid at auction in the open market
D An individuals intrinsic worth of the building

vi) A building's "Cost" can be described as :

A The maximum price the market will derive for the building
B The price of the factors of production used to construct the building
C The dollar amount of a bid at auction in the open market
D An individuals intrinsic worth of the building

vii) Cost planning can be best described as :

A A process that ensures the designer meets all functional requirements
B An estimate of the builders tender to construct a proposed building
C A process that allocates all costs to the appropriate element
D An owners opinion of worth of each functional element

viii) Cost analysis can be best described as :

A A process that ensures the designer meets all functional requirements
B An estimate of the builders tender to construct a proposed building
C A process that allocates all costs to the appropriate element
D An owners opinion of worth of each functional element

Question 3 – Forecasting

(20 marks)

Discuss the following statement "time series forecasting is a statistical technique used to measure the relationship between a series of data and a period of time, which can be decomposed into a number of different components"

Question 4 – Definition of terms

(15 marks)

Briefly explain the following terms

i) Linear regression

ii) Exponential smoothing

iii) Qualitative forecasting

iv) Forecast error

v) Forecast bias

Question 5 – Cost Analysis

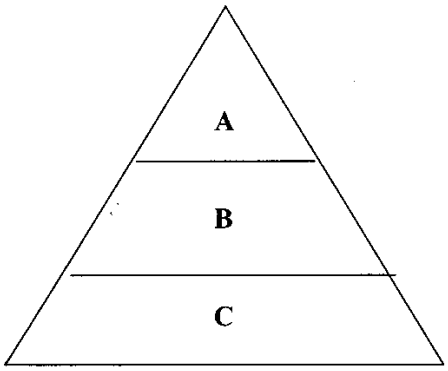
(11 marks)

Describe the difference between function area cost analysis and elemental cost analysis.

Question 6 – Cost Modeling

(6 marks)

Which best describes the cost modeling techniques used in the traditional cost modeling pyramid by Ferry and Brandon?



Please circle the best answer (Please circle)

ZONE	Best Zone Description
A	Space / Unit / Element / Not Applicable
B	Space / Unit / Element / Not Applicable
C	Space / Unit / Element / Not Applicable

END OF PAPER

(Total marks possible 100 marks)