

**THE UNIVERSITY OF SOUTH AUSTRALIA**  
**SCHOOL OF GEOINFORMATICS, PLANNING & BUILDING**

PROGRAM: Bachelor of Construction Management & Economics  
COURSE: Construction Cost Planning  
EXAMINATION: Internal Examination, Semester 2, 2004  
DURATION: 10 minutes reading time + 2.5 hours exam time  
EXAMINER: Tom Heinrich (External 8374 4479)

**INSTRUCTIONS TO CANDIDATES:**

- This exam is worth 50% of the total course marks
- Attempt any three out of the four questions
- All questions are of equal value
- State any assumptions made

**QUESTION 1.**

a) Prepare a Developers Budget showing how much you are prepared to pay for land for an office development, based on the following assumptions:

Office Building – 4000m<sup>2</sup> FECA, 3600m<sup>2</sup> lettable area

Rental of \$225/m<sup>2</sup> p.a.

Construction cost of \$1300/m<sup>2</sup> plus \$250,000 for siteworks

2 Year period from inception to completion

Professional Fees on construction – 10%

Capitalisation rate – 7%

Building, Planning & other approval fees - \$300,000

Stamp duty & fees on land purchase – 4%

Holding charges on land – 6% p.a.

Finance charges – 8% p.a.

Developers profit – 10% of Gross Development Value

Leasing Costs – 5%

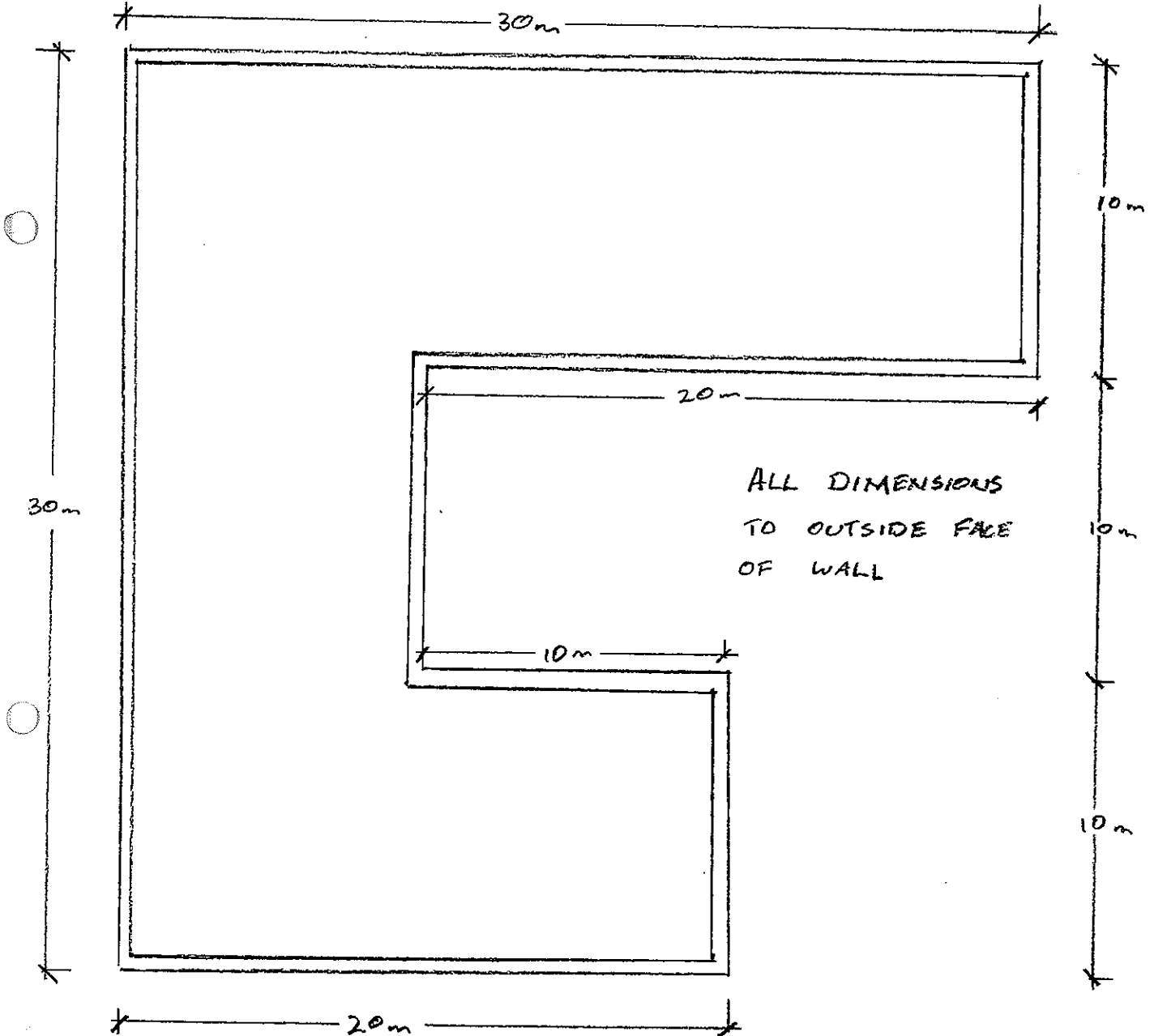
b) Define the term “sensitivity analysis” & discuss its importance.

**QUESTION 2.**

a) Based on the sketch below determine FECA & the Wall:Floor Area Ratio.

All external walls are 300mm thick, Ground to First Floor height is 3.0m and First Floor to eaves level is 3.0m. The Ground & First floors are exactly the same.

Floor Plan:



b) Based upon the plan form of this building explain why it may be more expensive than an "average" building of this type. Assuming that a two storey building is still required, what is the most cost efficient, easily constructed plan form & size to provide the required area.

**QUESTION 3.**

Given a cost per square meter for a previous project, discuss the factors that you would consider prior to using this rate for a new building proposal.

**QUESTION 4.**

a) You have been asked to provide a cost per square metre for a 4 star hotel development. The only relevant information you have is a three year old record for a 3 star hotel. Using this data, determine an appropriate cost/m<sup>2</sup> for the new development.

Assume that the substructure will be 10% less expensive, the rest of the structure will be similar, the cost of external doors will be \$25,000 greater, the internal walls & doors will be similar, the finishes & joinery will be 20% more expensive and the services component will be 5% more expensive. (Detach the following page & hand it up with your exam paper).

b) If a lift costing \$120,000 (at current rates) were to be added to the proposed project, what would the revised square metre rate be?

	<b>EXISTING RECORD</b>	<b>PROPOSED BUILDING</b>
Building Type	3 Star Hotel Rise Office	4 Star Hotel
Location	Adelaide	Adelaide
Locality Index	100	100
Tender Date	January, 2001	September, 2004
Building Price Index (DHC Index)	283.8	301.3
FECA	1799m2	1200m2
UCA	0 m2	0m2
UFA	1440m2	900m2
Area Efficiency	80%	75%
No. of Storeys	2	2
Building Height	7.0m	7.0m
Floor/Floor Height	3.5m	3.5m
Wall Floor Area Ratio	0.47:1.00	0.64:1.00
Description	Rectilinear 25.7 x 35 m	Rectangular 40 x 15 m
Type of Contract	Lump Sum Fixed Price	Lump Sum Fixed Price
Time for Completion	7 months	Average
Special Factors	Nil	Nil
Building Cost	\$2,351,293	
Building Rate	\$1,307.00	
<b>Elemental Analysis</b>		
01SB		75.00
02CL		22.00
03UF		110.00
04SC		20.00
05RF		95.00
06EW		160.00
07WW		75.00
08ED		12.00
09NW		90.00
10NS		35.00
11ND		30.00
12WF		10.00
13FF		55.00
14CF		48.00
15FT		65.00
16SE		Nil
17SF		24.00
18PD		18.00
19WS		7.00
20GS		Nil
21SH		Nil
22VE		Nil
23EC		Nil
24AC		140.00
25FP		15.00
26LP		85.00
27CM		8.00
28TS		-
Share of Preliminaries		108.00
Adjust for Date		-
<b>Total Building Rate</b>		<b>\$1,307.00</b>