

**UNIVERSITY OF SOUTH AUSTRALIA  
SCHOOL OF NATURAL & BUILT ENVIRONMENTS**

- PROGRAM:** Bachelor of Construction Management & Economics
- COURSE:** 08166 BUILDING SURVEYING 1 (BUIL 4018)
- EXAMINATION:** Semester 1, 2005
- DURATION:** 3 hours of exam time (1 ½ hours each for Parts A and B) preceded by 10 minutes of reading time, a total of 3 hrs 10 mins.  
For ENTEXT students 10 minutes of reading time plus 3.5 hours of exam time, a total of 3 hrs 40 mins.
- EXAMINERS:** Part A – Stephen Pullen (8302 2753) – Building Pathology  
Part B - John Mazzarolo (0419 817 243) - Building Surveying  
Course Coordinator – Stephen Pullen. Ph. 8302 2753.

**INSTRUCTIONS TO CANDIDATES:**

- This exam is worth 50% of the total course marks.
- Part A and Part B of this examination are of equal value.
- The questions in Part A are of equal value.
- Attempt all questions.
- The exam is open book. A calculator is allowed.
- State any assumptions made.
- **Answer Parts A & B in separate exam booklets.**
- Write on both sides of the page.
- Commence each new question on a new page.

## PART A – BUILDING PATHOLOGY

### Question 1

This question consists of two parts:

(a) Write notes on defects that can occur with elastomeric joint sealants.

**12 marks**

(b) A well known architectural practice are designing a 25 storey office building. The external façade will consist of precast concrete panels with glazing units. All the external joints (amounting to 20km in length) between the panels and glazing units are of the single stage type. You have been asked to recommend quality assurance procedures to ensure that the elastomeric sealant is installed satisfactorily in the joints thereby forming a durable and waterproof envelope to the building. Write a report to the architect detailing your recommendations.

**13 marks**

### Question 2

The following schedule lists costs for the repair and upgrade of the buildings of a college facility. Your company has been asked to make recommendations to the college with regard to their 5 year building maintenance schedule so that:

- the back-log of maintenance not yet carried out is included in the forward plan
- annual maintenance expenditure in any of the next 5 years does not exceed \$44,000
- due regard is given to the maintenance of the building, safety issues and legal requirements.

Explain the reasons for your final schedule with reference to any risks or ramifications involved. Justify the changes in the form of a short report to the client. Add a brief paragraph to the report outlining the advantages of adopting the CSIRO condition index approach.

Building items	Back-log	Year 1	Year 2	Year 3	Year 4	Year 5
Int. repairs & paint	5500	7000	0	7900	0	8000
Ext. repairs & paint	2800	4300	0	5800	0	1800
Upgrade sprinkler system	0	15900	0	0	0	0
Roof	8200	0	0	10400	0	0
Photovoltaic roof panels	0	0	25000	0	0	0
Gutters & downpipes	0	4000	0	0	0	0
Carpet/PVC flooring (staff offices)	6500	5100	0	0	0	5900
Concrete floor (outbuildings)	0	0	8400	0	0	0
Air conditioning replacement	0	0	0	22000	0	0
Ramps for disabled	16000	0	0	0	0	0
Electrical board replacement	0	0	7200	0	0	0
Total	39000	36300	40600	46100	0	15700

**25marks**

## PART B - BUILDING SURVEYING

The plan attached shows an existing warehouse and factory building. The whole building was previously used as a factory. A previous application resulted in a change of use of part of the building from factory warehouse. This is the area noted as “existing warehouse”.

The owner now wishes to convert the remainder of the building to warehouse use, and use part of the south-west area of the building as a 250 square metre retail area. An elevation of the proposed entry to the retail area is shown.

As the Building Surveyor appointed to grant Building Consent Rules for the proposed change of classification, determine:

- (a) the Building Code of Australia requirements that are applicable to the building, and:
- (b) all the additional information you will require from the applicant to ensure you have sufficient documentation to be able to grant a Building Rules Consent.

Use the standard Building Code of Australia check list to determine the requirements.

**50 marks**