

NATIONAL UNIVERSITY OF SINGAPORE

SSD2210 MANAGING SINGAPORE'S BUILT ENVIRONMENT

Semester 1, AY2013/2014

Time Allowed: 2 Hours

INSTRUCTIONS TO CANDIDATES

1. This examination paper contains **FIVE** questions and comprises **FIVE** printed pages.
2. Candidates must attempt any **FOUR** questions.
3. The total mark for this paper is 100.
4. Candidates may make necessary assumptions to assist their answers, provided that these assumptions are not inconsistent with the information given in the question and are stated in the answer.
5. This is an **OPEN BOOK** examination.
6. The examiner for this module is A/P Ling Yean Yng, Florence.

Answer any **FOUR** questions

Question 1 (25 marks)

Indonesia has plans to construct a 30km bridge linking the islands of Sumatra and Java (see Appendix 1). Evaluate the procurement method for the feasibility study contract, by answering the questions below.

- a) What is the problem? (2 marks)
- b) What is the reason for your response in part (a)? (2 marks)
- c) What assumptions did the government committee comprising top ministers (excluding Mr Agus) make? If you are Mr Agus, the Finance Minister, how would the situation look? (4 marks)
- d) If we agree with the government committee's (comprising top ministers but excluding Mr Agus) recommendation to award the contract to GBLs, what are the implications? (2 marks)
- e) Is the recommendation to award the contract to GBLs right? Why? (2 marks)
- f) Give an example to support your line of thinking. (2 marks)
- g) Give an example which contradicts your line of thinking. (2 marks)
- h) Discuss how the finance minister's concern about the need to adopt international practices and having transparency could be resolved. (9 marks)

Question 2 (25 marks)

In July 2013, Dr John Keung, CEO of BCA said:

“With our productivity drive towards off-site production, mechanization and standardization, the demand for precast components and integrated construction will increase significantly in the next few years.”

Based on the quotation above, discuss the advantages and disadvantages of the following in the context of constructing a condominium project in Orchard Road:

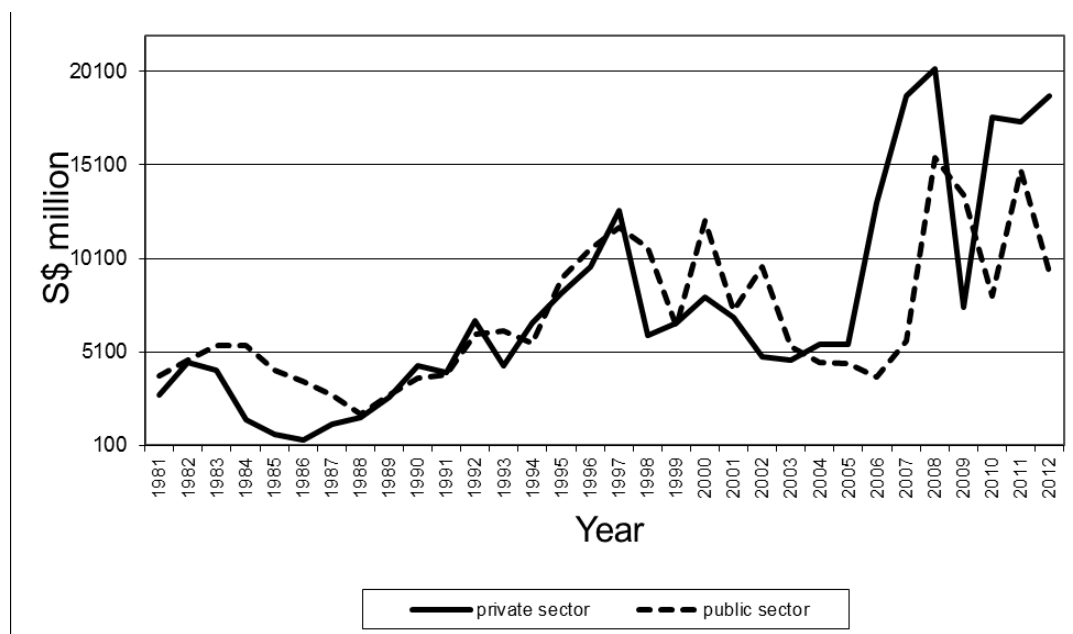
- a) off-site production (5 marks)
- b) mechanization (5 marks)
- c) standardization (5 marks)
- d) precast components (5 marks)
- e) integrated construction (5 marks)

Question 3 (25 marks)

- a) In the context of the construction industry, discuss why the public sector needs to control spending, and plan and implement building and infrastructure projects in a timely manner.

(15 marks)

- b) Based on Figure 1 given below, discuss whether the public sector in Singapore practices counter cyclic spending in the construction industry between 1981 and 2012.

**Figure 1: Construction Contracts awarded**

(5 marks)

- c) Discuss the reasons why the public sector cannot always practice counter cyclic spending in the construction industry.

(5 marks)

Question 4 (25 marks)

In the context of construction projects, discuss the advantages and disadvantages of the practices listed below, and how the disadvantages may be minimized:

- a) Traditional design-bid-build arrangement (9 marks)
- b) Selective tendering procedure (8 marks)
- c) Awarding the contract to the lowest bidder (8 marks)

Question 5 (25 marks)

- a) In the context of the construction industry, identify three regulatory roles of the government and discuss their importance. (12 marks)
- b) Identify three measures which the government adopts to develop Singapore's construction industry and evaluate how effective these measures are. (13 marks)

Appendix 1: Sunda Strait Bridge hangs in the balance

By Wahyudi Soeriaatmadja, 1 September 2012, The Straits Times, p. A16.

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JAKARTA - A split among top ministers in the Indonesian government is threatening to delay the 2014 start date of the US\$10 billion (S\$13 billion) Sunda Strait Bridge which, when completed, will be the country's longest.

Finance Minister Agus Martowardojo is baulking at giving the final go-ahead for a feasibility study on the project, particularly over concerns in a presidential decree connected to what would be Indonesia's single largest infrastructure project.

The decree appointed a private consortium, Graha Banten Lampung Sejahtera (GBLS), controlled by tycoon Tomy Winata, to conduct the study, a move that also raised questions about transparency.

Mr Agus refuses to sign off on the decision - supported by all other key ministers - to allow GBLS to proceed because the government would have to compensate it in full even if the project does not take off.

"The investors may start preparation and later ask for plantation, mining concessions on the developed lands near the bridge. And when the government says no, that would be construed as cancellation of the project, and thus they would claim their money," he was quoted as saying in leaked minutes of an official meeting.

The 29km bridge will connect Indonesia's two most populated islands of Sumatra and Java. It is expected to cost more than 100 trillion rupiah (S\$13 billion) and would be Indonesia's largest single infrastructure project. First envisioned by then President Sukarno in the 1960s, the bridge is now part of the government's long-term plans to connect the two main islands and boost trade within the country.

GBLS was formed in 2007 and includes the cash-strapped provincial governments of Lampung on Sumatra and Banten on Java. In March, the consortium signed a deal with the China Railway Construction Corporation to invest in the bridge. But it has been waiting for the final nod for the mega-project from a government committee comprising seven top ministers. That has yet to come, because Mr Agus - alone among the seven - is resolutely challenging the consortium.

In particular, the Finance Minister is against providing the guarantee for the more than 1 trillion rupiah cost of the feasibility study, typically demanded by potential creditors or suppliers of large-scale projects to guard against default. Mr Agus thinks GBLS should not have it because it is an unsolicited project investor. It was granted this special status by the presidential decree last December.

"The Sunda Strait Bridge project has long been under the government development plan. It is therefore a government-initiated project," he said in response to questions from The Straits Times, adding that discussions are ongoing. The Finance Ministry is in favour of the initial feasibility study being undertaken by the government itself through the Ministry of Public Works.

Leaked minutes of meetings show fierce exchanges between Mr Agus, a former top banker, and the other ministers, who have argued that the stalemate would hurt the President's image. Mr Agus, however, is adamant that international practices and transparency matter more for Indonesia's credibility with foreign investors and lenders.

END OF PAPER