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16 December 2013

Clerk to Public Works Subcommittee
Legislative Council Secretariat
Legislative Council Complex
1 Legislative Council Road
Central, Hong Kong
(Attn : Ms Annette LAM)

By E-mail

Dear Ms LAM,

**Legislative Council
Public Works Subcommittee**

Follow-up to Briefing on Estimation of Project Cost

At the captioned Briefing held on 12 November 2013, members raised the following issues:

1. **Addressing the concerns of Hon WONG Kwok-hing, Hon TAM Yiu-chung, Hon Alan LEONG and Hon Emily LAU, the Administration agreed to provide the following information/analysis in respect of the 34 submissions among the some 630 submissions approved in the past 10 years that have sought the Finance Committee's approval for increasing the Approved Project Estimate:**
 - (a) **the total amount of cost overrun and the respective amount involved in each of the 34 submissions;**
 - (b) **whether large-scale projects were more likely to have cost overrun;**
 - (c) **distribution breakdown of projects with cost overrun by year**

- in the past 10 years; and**
- (d) the reasons for cost overrun.**
- 2. At the request of Hon CHAN Yuen-han and Hon Emily LAU, the Administration agreed to provide, as far as practicable, information on:**
- (a) the number of road works projects with slippage of works; and**
- (b) among the some 630 submissions approved in the past 10 years, the number of public works projects with project slippage and the correlation between slippage of works and cost overrun; if any.**
- 3. Addressing the concerns of Hon Abraham SHEK and Hon Emily LAU, the Administration was requested to:**
- (a) Illustrate, with a project as an example, the difference between the New Engineering Contract (NEC) form, a contract form that integrates a partnering approach in contract management, and the prevailing contract form in the implementation of a works project;**
- (b) Provide views of major stakeholders in the construction industry, including the Hong Kong Construction Association, the Hong Kong E&M Contractors' Association Limited and the Hong Kong Federation of Electrical and Mechanical Contractors Limited on the adoption of NEC, in particular the problems encountered, if any; and**
- (c) A list of public works projects with contract(s) awarded using NEC form.**

Preamble

As mentioned in the Briefing held on 12 November 2013, the project cost for public works projects comprises "Base Estimate", "Project Contingency" and "Provision for Price Adjustment". "Base Estimate" is the estimated basic cost of a project, including construction cost in terms of labour, plant and materials. "Project Contingency" is a provision to cater for additional costs due to unforeseen circumstances as from the date the project obtained funding approval to tendering as well as during construction stage of the project. "Provision for price adjustment" is to cater for the price level adjustment as well as the changes in the costs of labour and materials during the construction

contract period.

We wish to point out again that, the project cost shown in the funding application to LegCo is only an estimate based on the available information at the time of funding application, but not the actual expenditure for a project. Under the principles of prudent management of public money and close monitoring of project expenditure, works departments will make use of the available information and base on the latest situations to prepare the most accurate project estimate. We will never earmark excessive funding so as not to unnecessarily freeze internal resources and affect the implementation of other projects. However, in case there is any unforeseen condition which falls outside our expectation or when there is a sudden surge in the labour and material costs due to severe price fluctuations, the project contingency and provision for price adjustment included in the original project estimate may become insufficient. Under this circumstance, we would inevitably need to seek LegCo's approval for additional funding.

In the past 10 LegCo sessions, the Finance Committee has approved over 600 funding submissions. The total amount involved, excluding that for the block allocation items, is about \$620 billion. Among which, 34 submissions, accounting for around 60 projects, in a total amount of about \$21 billion were approved for the increase in the Approved Project Estimate (APE). In other words, the total amount for the increase in APE is about 3.4% of the total approved funding.

We would appeal to Members' understanding that these circumstances are out of our original contemplation, and are extremely difficult if not impossible to avoid. Nevertheless, we will continue to ensure the accuracy of project estimates and endeavor to ensure proper use of public money under any circumstances.

Responses

For the particular issues raised by the Members at the Briefing, we provide the information as follows :-

- 1. Concerns of Hon WONG Kwok-hing, Hon TAM Yiu-chung, Hon Alan LEONG and Hon Emily LAU on the 34 submissions that have sought the Finance Committee's approval for increasing the APE in the past 10 LegCo sessions**

- (a) In the past 10 LegCo sessions, the Finance Committee has approved a total of 34 submissions, which accounted for around 60 projects, for increasing APE. The total amount involved was about \$21 billion. Details are shown in **Annex 1**.
- (b) Among the around 60 projects that have sought increase in APE, only 15 items are with APE exceeding \$1 billion. It indicates that large-scale projects are not prone to have cost overrun.
- (c) The distribution of projects with cost overrun by year in the past 10 LegCo sessions is shown in **Annex 1**.
- (d) In general, the main reasons for the increase in APE include :
 - (i) Increase in project contingency (and its associated provision for price adjustment) to account for unforeseen circumstances as from the date the project obtained funding approval to tendering as well as during construction stage of the project, such as higher-than expected tender return, worse-than-expected ground conditions, and additional costs for extra works to meet local concerns; and
 - (ii) Increase in provision for price adjustment to cover higher-than-expected escalation in labour and material costs.

2. Concern of Hon CHAN Yuen-han and Hon Emily LAU on project slippage and cost overrun

On the issue of extending project completion, apart from the delay caused by contractors, we will also reasonably extend the project completion period taking account of conditions such as additional works instructed, longer-than-expected public consultation period or inclement weather. Among the over 600 projects approved in the past 10 LegCo sessions –

- (a) the number of road works projects with extended project completion date is 37.
- (b) the number of public works projects with extended project completion date is about 160. Among which, only 21 items required increase in APE. As such, we do not see any direct correlation between slippage of works and cost overrun.

3. Concerns of Hon Abraham SHEK and Hon Emily LAU on New Engineering Contract (NEC) form

The Development Bureau has been promoting partnering approach in public works contract in order to enhance the management efficiency and cost effectiveness of the works contracts. Starting from 2009, we have adopted NEC form, which emphasises mutual trust and co-operation, in some pilot projects. The Drainage Services Department's contract "Improvement of Fuk Man Road Nullah in Sai Kung" (PWP No. 4157CD) is the government's first pilot trial of using NEC form in public works contract.

- (a) Using the "Improvement of Fuk Man Road Nullah in Sai Kung", which is the government's first pilot trial of using NEC form in public works contract, as an example to compare with prevailing contracts, the contract integrates partnering features in the contract provisions, including the following:
 - (i) It is expressly stated that the contracting parties shall act in a spirit of mutual trust and co-operation.
 - (ii) To promote collaborative contract management, the contracting parties are required to reply to communication within a specified period.
 - (iii) With a view to stimulating collaborative management of risks identified throughout the contract period, the contract introduces a risk management system, comprising the elements of early warning notification and risk reduction meeting. The contracting parties shall provide early warning to each other as soon as they identify risks which could increase the total construction cost and/or delay contract completion. The contracting parties shall attend risk reduction meetings and to act co-operatively with a common goal to avoid or reduce the effect of the risks.
 - (iv) The contract adopts the pain share/gain share mechanism. The employer and the contractor share the difference between the actual construction cost and the final target cost¹. It drives the contracting parties to a common goal of

¹ The final target cost is the target cost tendered by the contractor and adjusted by price fluctuation and the monetary compensation that the contractor is entitled under the contract, such as the payment for additional works, unforeseen ground conditions, inclement weather etc.


completing the works together at reduced cost and in shorter construction period. To limit its financial liability, the employer would only share the overspending up to 10% above the final target cost. In fact, this ceiling percentage for share of overspending can be adjusted according to the need of individual works contract.

The contract was completed in 2012 with both the government and contractor satisfied with the outcome. The actual completion date is six months ahead of the contractual completion date, and the actual construction cost is 5% (about \$3 million) below the final target cost.

- (b) We have consulted the major stakeholders including the Hong Kong Construction Association, the Hong Kong Electrical and Mechanical Contractors Association Limited, the Hong Kong Federation of Electrical and Mechanical Contractors Limited, the Hong Kong General Building Contractors Association Limited and the Association of Consulting Engineers of Hong Kong on our trial use of NEC form in public works projects in the meetings of our Building Contractors Committee and the Consulting Engineers' Committee respectively. They expressed support to our trial.
- (c) The list of public works projects with contract awarded using NEC form is at **Annex 2**.

I should be grateful for your kind assistance to distribute this letter to all Members to the Public Works Subcommittee for their reference, please.

Yours sincerely,



(John Kwong)

for Secretary for Development

c.c. Secretary for Financial Services and the Treasury
(Attn : Ms Joyce HO)

Approved Submissions with Increase in Approved Project Estimate in the Past 10 LegCo Sessions

LegCo Session	PWP No.	PWP Title	Increase in Approved Project Estimates (APE) (\$M)	Revised APE (\$M)
2003-04	8056MM	Enhancement of infection control facilities in the public hospital system (Batch A)	68.1	355.3
2003-04	6718TH	Improvement to Tung Chung Road between Lung Tseng Tau and Cheung Sha	58.7	688.5
2004-05	B564CL	Development near Choi Wan Road and Jordan Valley	230.0	2,009.3
2005-06	3242RS	Tseung Kwan O Sports Ground	59.2	352.3
2005-06	4081DR	Northeast New Territories village sewerage, phase 2	38.0	145.0
2006-07	6582TH	Central Kowloon Route – consultants' design fees and site investigations	93.3	192.3
2006-07	6718TH	Improvement to Tung Chung Road between Lung Tseng Tau and Cheung Sha	143.5	832.0
2008-09	-	Increase in Approved Project Estimates for 25 Category A projects under construction Members	2,084.5	20,084.3
2008-09	-	Increase in Approved Project Estimates for ten Category A projects	741.5	3,073.7
2008-09	7343CL	Central reclamation phase III – engineering works	2,200.0	5,761.5
2008-09	6746TH	Reconstruction and Improvement of Tuen Mun Road	2,183.8	6,804.3
2008-09	3419RO	Aldrich Bay Park	19.6	135.2
2008-09	7070CD	Yuen Long bypass floodway	40.8	517.0
2008-09	3285ES	Extension of Lai Chack Middle School at Scout Path, Kowloon	19.3	100.0
2009-10	3083KA	Tamar Development Project	359.8	5,528.7
2009-10	3281ES	Secondary school at Aberdeen Reservoir Road, Aberdeen	27.3	209.3
2009-10	4359DS	North District sewerage, stage 1 phase 2B	55.0	185.0
2009-10	4234DS	Outlying Islands sewerage, stage 1 phase 2 – Sok Kwu Wan sewage collection, treatment and disposal facilities	97.3	353.7
2009-10	4230DS	Outlying Islands sewerage, stage 1 phase 1 part 2 – Yung Shue Wan sewerage, sewage treatment works and outfall	59.2	347.5
2009-10	9076WC	Improvement to Hong Kong Central mid-level and high level areas water supply – remaining works	100.5	329.8
2009-10	4329DS	Upgrading of Pillar Point sewage treatment works	559.6	1,920.5
2010-11	B645TH	Sai Sha Road widening between Kam Ying Road and future Trunk Road T7 junction	8.9	131.4
2010-11	5045CG	District Cooling System at the Kai Tak Development	190.8	1,861.8
2010-11	8008MA	Redevelopment of Caritas Medical Centre, phase 2	501.5	1,719.6

LegCo Session	PWP No.	PWP Title	Increase in Approved Project Estimates (APE) (\$M)	Revised APE (\$M)
2011-12	4103CD	Drainage improvement in Northern Hong Kong Island –Hong Kong West drainage tunnel	336.6	3,381.3
2011-12	4111CD	Drainage improvement in Tsuen Wan, Kwai Chung and Tsing Yi – Tsuen Wan drainage tunnel	226.5	1,486.0
2011-12	4148CD	Drainage improvement works in Ping Kong, Kau Lung Hang, Yuen Leng, Nam Wa Po and Tai Hang areas	97.9	358.4
2011-12	4152CD	Drainage improvement works in upper Lam Tsuen River, She Shan River, upper Tai Po River, Ping Long and Kwun Hang	141.9	568.2
2011-12	6844TH	Hong Kong–Zhuhai–Macao Bridge—Hong Kong Link Road	8,857.3	25,047.2
2011-12	8002QW	Revitalisation Scheme—Revitalisation of the Former Lai Chi Kok Hospital into Jao Tsung-I Academy/The Hong Kong Cultural Heritage	35.0	258.5
2012-13	4382DS	Sewerage at Clear Water Bay Road, Pk Shui Sun Tsuen and west of Sai Kung town	68.4	359.0
2012-13	6819TH	Traffic Improvements to Tuen Mun Road Town Centre Section	153.5	1,967.9
2012-13	6076TI	Bus-bus interchanges on Tuen Mun Road	43.0	205.3
2012-13	5045CG	District Cooling System at the Kai Tak Development	1,284.1	3,145.9
34 submissions, Total Amount:			21,184.4	

Remarks: 34 submissions for increase in APE, which accounted for a total of about 60 projects.

**List of Public Works Projects with Contract
awarded using New Engineering Contract Form**

	PWP No.	Project Title	Approved Project Estimate (\$M)	Works Start Date
1	4157CD	Improvement of Fuk Man Road Nullah in Sai Kung	95.8	August 2009
2	6805TH	Retrofitting of Noise Barriers on Fanling Highway (MTR Fanling Station and Wo Hing Road)	247.1	November 2010
3	6848TH	Retrofitting of Noise Barriers on Tai Po Tai Wo Road near Po Nga Court	96.6	March 2012
4	4378DS	North District Sewerage, Stage 2 Part 2A - Pak Hok Lam Trunk Sewer and Sha Tau Kok Village Sewerage	272.1	June 2012
5	4384DS	Yuen Long and Kam Tin Sewerage, Stage 3 Package 2	213.4	September 2012
6	4160CD	Happy Valley Underground Stormwater Storage Scheme	1,065.8	September 2012
7	4332DS	Lam Tsuen Valley Sewerage, Stage 2	588.3	October 2012
8	6798TH	Improvement to Pok Oi Interchange	264.8	November 2012
9	8073MM	Tin Shui Wai Hospital	3,910.9	February 2013
10	9333WF	Improvement of Fresh Water Supply to Cheung Chau	254.8	October 2013