

## **ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE**

**HEAD 707 - NEW TOWNS AND URBAN AREA DEVELOPMENT**  
**New Territories East Development**  
**Civil Engineering - Land development**  
**177CL - Sha Tin New Town - remaining engineering works**

Members are invited to recommend to Finance Committee the upgrading of **177CL** to Category A at an estimated cost of \$491.6 million in money-of-the-day prices for the provision of infrastructure at Areas 34 and 52 in Shui Chuen O and Area 56A in Kau To, Sha Tin.

### **PROBLEM**

There is no infrastructure to serve the planned developments at Areas 34 and 52 in Shui Chuen O and Area 56A in Kau To, Sha Tin.

### **PROPOSAL**

2. The Director of Civil Engineering and Development (DCED), with the support of the Secretary for Housing, Planning and Lands, proposes to upgrade **177CL** to Category A at an estimated cost of \$491.6 million in money-of-the-day (MOD) prices for the provision of infrastructure at Areas 34 and 52 in Shui Chuen O and Area 56A in Kau To.

**/PROJECT .....**

**PROJECT SCOPE AND NATURE**

3. The scope of **177CL** comprises –
- (a) construction of about 2 kilometres (km) each of two single two-lane roads at Shui Chuen O and Kau To;
  - (b) construction of elevated highway structures and retaining structures, slope stabilisation works, drainage works, sewerage works and landscaping works associated with the road works mentioned in item (a) above;
  - (c) re-construction and widening of about 550 metres (m) of To Shek Street and 350 m of Shui Chuen Au Street;
  - (d) re-construction of about 300 m of Lai Ping Road;
  - (e) improvement works of three road junctions at Sha Tin Wai Road and two road junctions at Ma Liu Shui Section of Tai Po Road;
  - (f) construction of about 320 m of noise barriers on To Shek Street;
  - (g) construction of trunk sewers of about 2.3 km ranging from 375 millimetres (mm) to 600 mm in diameter near Pok Hong Estate, and under Sha Tin Wai Road, Lai Ping Road and Ma Liu Shui Section of Tai Po Road; and
  - (h) implementation of environmental mitigation measures and an Environmental Monitoring and Audit (EM&A) programme for the works mentioned in items (a) to (g) above.

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The site plans of the proposed works are at Enclosures 1 and 2. We plan to start the proposed works in January 2006 for completion in November 2008. We will carry out the foundation works of the noise barriers in item (f) above at the same time as the road works, and will erect the noise barrier panels to tie in with the development in Area 52.

**/JUSTIFICATION .....**

## JUSTIFICATION

4. In September 1998, we completed the “Feasibility Study for Housing Sites in Sha Tin District” (the Study) which established the feasibility of the planned housing developments and the associated government / institutional / community (GIC) facilities at Areas 34 and 52 in Shui Chuen O, and the planned housing developments at Area 56A in Kau To. The Study has recommended site formation works and provision of infrastructure to cater for the planned developments. In October 2001 we commenced the site formation works in order to provide land for the planned housing developments. We have planned to commence the infrastructure works after completion of all necessary statutory procedures including the gazetting of the proposed road works under the Roads (Works, Use and Compensation) Ordinance, and the proposed sewerage works under the Water Pollution Control (Sewerage) Regulation. We completed the site formation works in December 2003 under **685CL** “Site formation of Areas 34 and 52 in Shui Chuen O and Area 56A in Kau To, Sha Tin”, and propose to provide the infrastructure under this project.

5. The proposed infrastructure at Areas 34 and 52 in Shui Chuen O is essential for private housing development as well as the associated GIC facilities including an indoor game hall, a fresh water pumping station, a fresh water reservoir and tentatively two schools. In accordance with the latest population forecast by Planning Department, we plan to accommodate a maximum population of about 10 600 in Area 52 by 2016. In order to support the development, we need to complete the infrastructure by 2008.

6. The proposed infrastructure at Area 56A in Kau To is essential for low-density private development. In accordance with the latest population forecast by Planning Department, we plan to accommodate a maximum population of about 6 300 in Area 56A by 2016. In order to support the development, we need to complete the infrastructure by 2008.

## FINANCIAL IMPLICATIONS

7. We estimate the capital cost of the project to be \$491.6 million in MOD prices (see paragraph 8 below), made up as follows –

/(a) .....

	<b>\$ million</b>	
(a) Road works	100.3	
(b) Elevated highway structures	81.7	
(c) Earth retaining structures	74.2	
(d) Slope stabilisation works	77.5	
(e) Drainage works	17.3	
(f) Sewerage works	30.1	
(g) Noise barriers	8.9	
(h) Landscaping works	2.5	
(i) Environmental mitigation measures	3.0	
(j) Consultants' fees for	48.1	
(i) construction stage	5.8	
(ii) resident site staff costs	40.3	
(iii) EM&A programme	2.0	
(k) Contingencies	44.4	
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Sub-total	488.0	(in September 2004 prices)
(l) Provision for price adjustment	3.6	
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Total	491.6	(in MOD prices)
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Owing to insufficient in-house resources, we propose to engage consultants to supervise the construction works. A breakdown by man-months of the estimate for the consultants' fees is at Enclosure 3.

8. Subject to approval, we will phase the expenditure as follows -

<b>Year</b>	<b>\$ million (Sept. 2004)</b>	<b>Price adjustment factor</b>	<b>\$ million (MOD)</b>
2005 - 2006	9.0	1.00450	9.0
2006 - 2007	120.3	1.00576	121.0
2007 - 2008	150.2	1.00576	151.1
2008 - 2009	120.5	1.00576	121.2
2009 - 2010	61.7	1.00953	62.3
2010 - 2011	26.3	1.02593	27.0
	488.0		491.6

9. We have derived the MOD estimate on the basis of Government's latest forecast of trend rate of change in the prices of public sector building and construction output for the period from 2005 to 2011. We will invite tenders for the proposed works under a lump-sum contract. The contract will provide for price adjustments as the contract period will exceed 21 months.

10. We estimate the annual recurrent expenditure arising from this project to be about \$3.1 million.

## **PUBLIC CONSULTATION**

11. We consulted the Development and Housing Committee of the Sha Tin District Council on the proposed works on 27 June 2000. The Committee supported the project but expressed concern on the capacity of a section of the Shui Chuen Au Street near Pok Hong Estate. We explained to the District Council that, according to the result of the Traffic Impact Assessment (TIA), To Shek Street would be the main access for traffic in Area 52 and Shui Chuen Au Street would only serve as a secondary access. Nevertheless, to address the Committee's concern, we will construct a lay-by with footpath at Shui Chuen Au Street near Pok Hong Estate which will improve traffic condition.

12. We gazetted the proposed road works under the Roads (Works, Use and Compensation) Ordinance on 7 June 2002 and received no objection. The then Permanent Secretary for the Environment, Transport and Works (Environment) authorised the proposed road works under the ordinance on 27 September 2002 and the notice of authorisation was gazetted on 4 October 2002.

13. We gazetted the proposed sewerage works under the Water Pollution Control (Sewerage) Regulation on 7 June 2002 and received no objection. The then Director of Environmental Protection (DEP) authorised the proposed sewerage works under the regulation on 23 August 2002 and the notice of authorisation was gazetted on 6 September 2002.

14. We updated the Development and Housing Committee of the Sha Tin District Council about the latest development of the project on 22 February 2005. Although a few members remained concerned about the capacity of the section of Shui Chuen Au Street mentioned in paragraph 11 above, the Committee as a whole supported the project.

15. Details of the proposed works were circulated to the Legislative Council Panel on Planning, Lands and Works in April 2005. No adverse comment was received.

## **ENVIRONMENTAL IMPLICATIONS**

16. The project is not a designated project under the Environmental Impact Assessment (EIA) Ordinance. Nevertheless, we completed an Environmental Assessment (EA) Study in September 1998. DEP has vetted the study report and agreed that the works would not have adverse long term environmental impact.

17. The key environmental mitigation measures set out in the EA Study for the proposed works include the use of silenced plant and noise screening, dust suppression by water spraying on unpaved roads, the use of detention basins for collecting site run-off, and restoration of woodland and shrubbery by replanting, where necessary. We will incorporate all the mitigation measures recommended in the EA study in the works contract. We estimate the cost of implementing the mitigation measures and the EM&A programme to be \$5.0 million. We have included this cost in the project estimate.

18. We further completed an environmental study for To Shek Street and Shui Chuen Au Street in February 2003. The study has concluded that the project would not have any adverse environmental impact at Shui Chuen Au Street but recommended that some noise mitigation measures should be provided at To Shek Street. These mitigation measures will help contain the noise level to an acceptable standard. DEP has vetted the report and agreed to its findings. In accordance with the recommendation of the study, we will provide noise barriers of about 320 m in length (comprising 4 m to 5.5 m high plain barrier and 5.5 m high vertical barrier with a 2 m bend in 45 degrees) along To Shek Street to protect the existing and planned noise sensitive receivers. The noise barriers will be of a transparent type. We estimate that a total of about 65 existing dwellings and about 77 planned dwellings will benefit from the provision of the noise barriers.

19. At the planning and design stages, we have considered ways of minimising construction and demolition (C&D) material. These include minimising slope excavation by means of soil nailing or concrete buttress as appropriate, maximising the use of the surplus excavation material in construction of road embankments and backfilling of retaining walls, and optimising the design level and layout of the access roads to balance the necessary cut and fill material.

20. We estimate that the project will generate about 149 000 cubic metres (m<sup>3</sup>) of C&D material. Of these, we will reuse about 130 000 m<sup>3</sup> (87%) on site and 13 000 m<sup>3</sup> (9%) as fill in the public filling areas<sup>1</sup>, and dispose of 6 000 m<sup>3</sup> (4%) at the landfills. The notional cost of accommodating C&D waste at the landfills is estimated to be \$750,000 for this project (based on a notional unit cost<sup>2</sup> of \$125/ m<sup>3</sup>).

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<sup>1</sup> A public filling area is a designated part of a development project that accepts public fill for reclamation purposes. Disposal of public fill in a public filling area requires a licence issued by the Director of Civil Engineering and Development.

<sup>2</sup> This estimate has taken into account the cost for developing, operating and restoring the landfills after they are filled and aftercare required. It does not include the land opportunity cost for existing landfill sites (which is estimated at \$90/m<sup>3</sup>), nor the cost to provide new landfills (which are likely to be more expensive) when the existing ones are filled. The notional cost estimate is for reference only and does not form part of this project estimate.

21. We will require the contractor to submit a waste management plan for approval with appropriate mitigation measures to avoid, reduce, reuse and recycle C&D material, including the allocation of an area for waste segregation. We will also require the contractor to ensure that the day-to-day operations on site comply with the approved waste management plan, and reuse the excavated material as filling material on site or on other construction sites as far as possible. To further minimise C&D material, we will require the contractor not to use hardwood for site hoarding, falsework or shoring for excavation, but to use metal in all components of site hoarding and signboards. We will control the disposal of public fill and C&D waste to designated public filling facilities and landfills respectively through a trip-ticket system. We will require the contractor to separate public fill from C&D waste for disposal at appropriate facilities. We will record the disposal, reuse and recycling of the C&D material for monitoring purposes.

## LAND ACQUISITION

22. The proposed works do not require any land acquisition. Clearance of government land for the project will require termination of a short term tenancy for a garage maintenance depot at Area 56A. We will charge the clearance cost estimated at \$100,000 to **Head 701 – Land Acquisition**.

## BACKGROUND INFORMATION

23. We included **177CL** in Category B in March 1994 for the remaining engineering works for the development of Areas 4C, 34, 38A, 52 and 56A of Sha Tin New Town.

24. In January 2000, we upgraded part of **177CL** to Category A as **664CL** “Site formation, roads and drains at Mui Lee in Areas 4C and 38A, Sha Tin” at an estimated cost of \$408.1 million in MOD prices. We completed the works in April 2003.

25. In January 2000, we also upgraded part of **177CL** to Category A as **665CL** “Design fees and site investigations for formation and servicing in Areas 34 and 52 in Shui Chuen O and Area 56A in Kau To, Sha Tin” at an estimated cost of \$45.3 million in MOD prices. The consultants completed the site investigation, detailed design and drawings for the site formation works and the proposed infrastructure works in January 2001 and August 2002 respectively.

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26. In May 2001, we upgraded part of **177CL** to Category A as **685CL** “Site formation of Areas 34 and 52 in Shui Chuen O and Area 56A in Kau To, Sha Tin” at an estimated cost of \$452.3 million in MOD prices. We completed the works in December 2003.

27. Water Supplies Department (WSD) completed the construction of a fresh water pumping station at Area 34 and a fresh water service reservoir at Area 52 under **243WF** in 2004. WSD is planning to complete the construction of a fresh water pumping station and a fresh water service reservoir at Area 56A under **244WF** by 2008. The water mains essential for the commissioning of the pumping stations and service reservoirs will be laid together with the proposed road works.

28. The proposed project will involve removal of 891 trees including 686 to be felled and 205 to be transplanted within the project site. All trees to be removed are not important trees<sup>3</sup>. We will incorporate planting proposals as part of the project, including estimated quantities of 13 371 trees, 241 938 shrubs and 890 square metres of grassed area.

29. We estimate that the proposed works will create about 435 jobs (350 for labourers and another 85 for professional/technical staff) providing a total employment of 11 700 man-months.

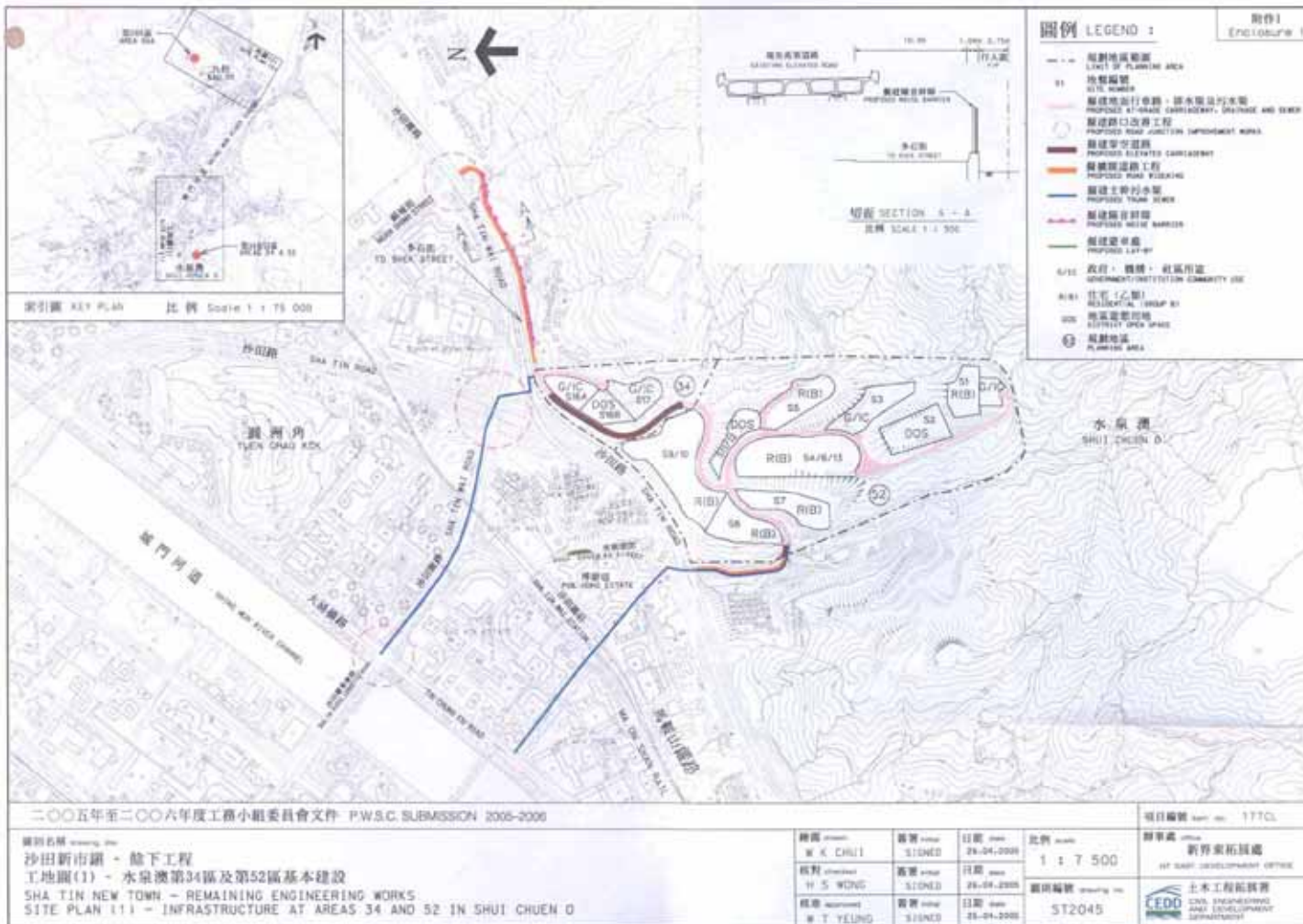
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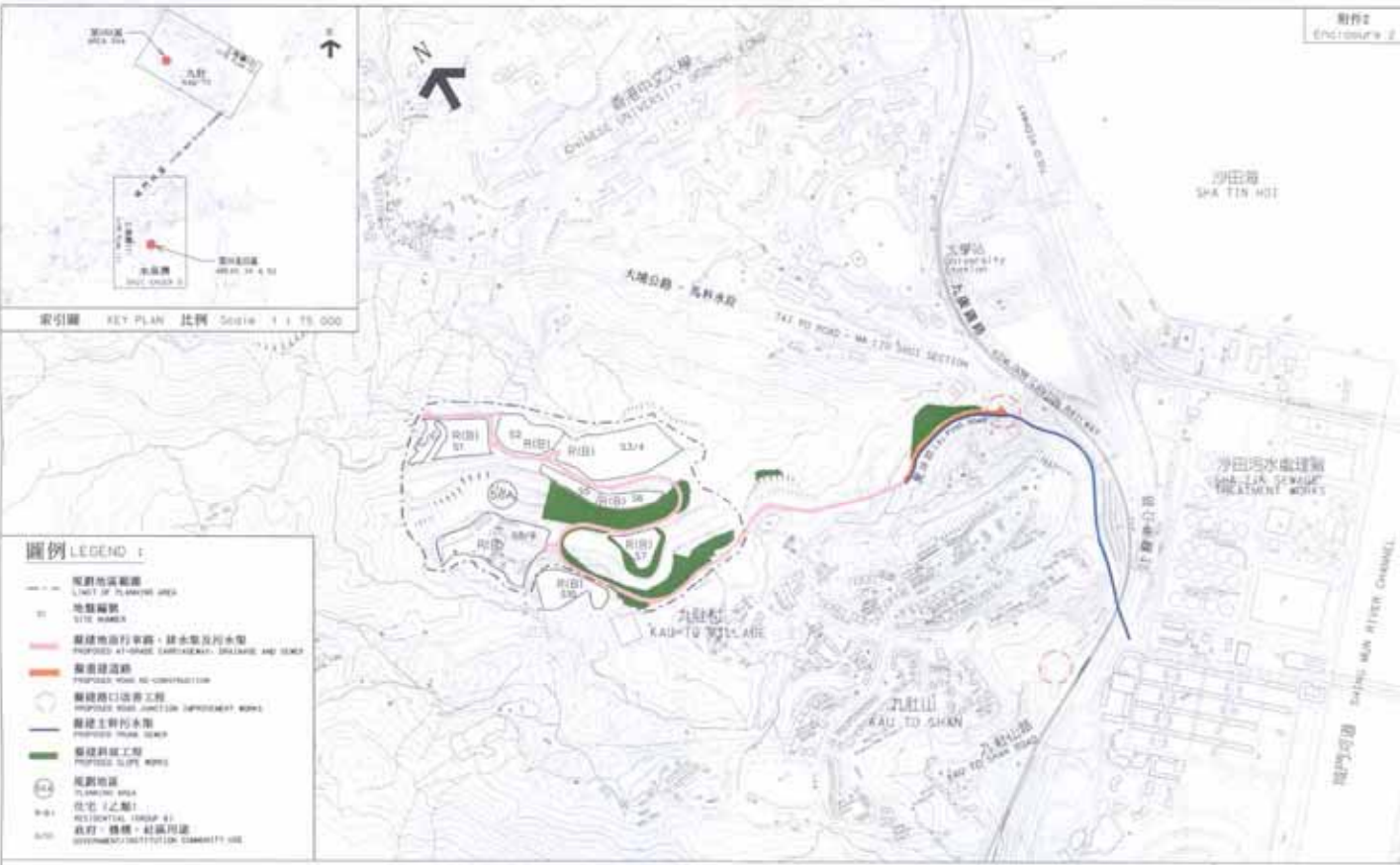
Housing, Planning and Lands Bureau  
May 2005

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<sup>3</sup> Important trees include trees on the Register of Old and Valuable Trees, and any other trees which meet one or more of the following criteria –

- (a) over 100 years old;
- (b) of cultural, historical or memorable significance;
- (c) of precious or rare species;
- (d) of outstanding form; or
- (e) with trunk diameter exceeding one metre (measured at one metre above ground level).





二〇〇五年至二〇〇六年度工務小組委員會文件 P.W.S.C. SUBMISSION 2005-2006

圖則名稱 Drawing No.  
沙田新市鎮 - 餘下工程  
工地圖(2) - 九肚第56A區基本建設  
SHA TIN NEW TOWN - REMAINING ENGINEERING WORKS  
SITE PLAN (2) - INFRASTRUCTURE AT AREA 56A IN KAU TO.

繪圖 W. K. CHUI	核實 SIGNED	日期 29.04.2005	比例 1 : 7 500
特別繪圖 H. S. WONG	核實 SIGNED	日期 04.04.2005	圖則編號 Drawing No. ST2046
核實 W. T. YEUNG	核實 SIGNED	日期 26.04.2005	

項目編號 Item No. 137C

辦事處 Office  
新界庫務處  
NT CEDD DEVELOPMENT OFFICE

土木工程師辦事處  
CEDD  
CIVIL ENGINEERING  
AND DEVELOPMENT  
DEPARTMENT

## 177CL – Sha Tin New Town – remaining engineering works

## Breakdown of estimates for consultants' fees

Consultants' staff costs			Estimated man- months	Average MPS* salary point	Multiplier (Note 1)	Estimated fees (\$ million)
(a)	Consultants' fees for construction stage (Note 2)					
(i)	contract administration	Professional Technical	- -	- -	- -	4.8 0.8
(ii)	preparation of as-built drawings	Professional Technical	- -	- -	- -	0.1 0.1
(b)	Resident site staff costs (Note 3)	Professional Technical	230.0 704.0	38 14	1.6 1.6	20.0 20.3
(c)	Environmental Monitoring and Audit Programme (Note 3)	Professional Technical	6.0 36.0	38 14	2.0 2.0	0.7 1.3
					<b>Total</b>	<b>48.1</b>

\* MPS = Master Pay Scale

## Notes

1. A multiplier factor of 2.0 is applied to the average MPS point to arrive at the full staff costs including the consultants' overheads and profit, as the staff will be employed in the consultants' offices. A multiplier factor of 1.6 is applied to the average MPS point to estimate the cost of resident site staff supplied by the consultants. (As at 1 January 2005, MPS pt. 38 = \$54,255 per month and MPS pt. 14 = \$18,010 per month)
2. The consultants' fees for contract administration and preparation of as-built drawings during construction stage are calculated in accordance with the existing consultancy agreement for the Sha Tin New Town Development Stage 2. The construction phase of the assignment will only be executed subject to Finance Committee's approval to upgrade the proposed project to Category A.
3. We will only know the actual man-months and actual costs after completion of the construction works.