

**SUPPLEMENTAL REPORT OF THE  
PUBLIC ACCOUNTS COMMITTEE  
ON  
REPORT NO. 70 OF THE DIRECTOR OF AUDIT  
ON  
THE RESULTS OF  
VALUE FOR MONEY AUDITS**

***November 2018***

***P.A.C. Report No. 70A***

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*Introduction*

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**The Establishment of the Committee** The Public Accounts Committee is established under Rule 72 of the Rules of Procedure of the Legislative Council of the Hong Kong Special Administrative Region, a copy of which is attached in *Appendix 1* to this Report.

2. **Membership of the Committee** The following Members are appointed by the President under Rule 72(3) of the Rules of Procedure to serve on the Committee:

**Chairman** : Hon Abraham SHEK Lai-him, GBS, JP

**Deputy Chairman** : Hon Kenneth LEUNG

**Members** : Hon Paul TSE Wai-chun, JP  
Hon Steven HO Chun-yin, BBS  
Hon LAM Cheuk-ting  
Hon SHIU Ka-fai  
Hon Tanya CHAN

**Clerk** : Anthony CHU

**Legal Adviser** : YICK Wing-kin

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**The Committee's Procedure**      The practice and procedure, as determined by the Committee in accordance with Rule 72 of the Rules of Procedure, are as follows:

- (a) the public officers called before the Committee in accordance with Rule 72 of the Rules of Procedure, shall normally be the Controlling Officers of the Heads of Revenue or Expenditure to which the Director of Audit has referred in his Report except where the matter under consideration affects more than one such Head or involves a question of policy or of principle in which case the relevant Director of Bureau of the Government or other appropriate officers shall be called. Appearance before the Committee shall be a personal responsibility of the public officer called and whilst he may be accompanied by members of his staff to assist him with points of detail, the responsibility for the information or the production of records or documents required by the Committee shall rest with him alone;
- (b) where any matter referred to in the Director of Audit's Report on the accounts of the Government relates to the affairs of an organisation subvented by the Government, the person normally required to appear before the Committee shall be the Controlling Officer of the vote from which the relevant subvention has been paid, but the Committee shall not preclude the calling of a representative of the subvented body concerned where it is considered that such a representative could assist the Committee in its deliberations;
- (c) the Director of Audit and the Secretary for Financial Services and the Treasury shall be called upon to assist the Committee when Controlling Officers or other persons are providing information or explanations to the Committee;
- (d) the Committee shall take evidence from any parties outside the civil service and the subvented sector before making reference to them in a report;
- (e) the Committee shall not normally make recommendations on a case on the basis solely of the Director of Audit's presentation;
- (f) the Committee shall not allow written submissions from Controlling Officers other than as an adjunct to their personal appearance before the Committee; and

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- (g) the Committee shall hold informal consultations with the Director of Audit from time to time, so that the Committee could suggest fruitful areas for value for money study by the Director of Audit.

2. **Confidentiality undertaking by members of the Committee** To enhance the integrity of the Committee and its work, members of the Public Accounts Committee have signed a confidentiality undertaking. Members agree that, in relation to the consideration of the Director of Audit's reports, they will not disclose any matter relating to the proceedings of the Committee that is classified as confidential, which shall include any evidence or documents presented to the Committee, and any information on discussions or deliberations at its meetings, other than at meetings held in public. Members also agree to take the necessary steps to prevent disclosure of such matter either before or after the Committee presents its report to the Council, unless the confidential classification has been removed by the Committee.

3. A copy of the Confidentiality Undertakings signed by members of the Committee has been uploaded onto the Legislative Council website.

4. **The Committee's Report** This Report contains the Public Accounts Committee's supplemental report on Chapters 1 and 8 of Report No. 70 of the Director of Audit on the results of value for money audits which was tabled in the Legislative Council on 25 April 2018. Value for money audits are conducted in accordance with the guidelines and procedures set out in the Paper on Scope of Government Audit in the Hong Kong Special Administrative Region - 'Value for Money Audits' which was tabled in the Provisional Legislative Council on 11 February 1998. A copy of the Paper is attached in *Appendix 2*. The Committee's Report No. 70 was tabled in the Legislative Council on 11 July 2018.

5. **The Government's Response** The Government's response to the Committee's Report is contained in the Government Minute, which comments as appropriate on the Committee's conclusions and recommendations, indicates what action the Government proposes to take to rectify any irregularities which have been brought to notice by the Committee or by the Director of Audit and, if necessary, explains why it does not intend to take action. It is the Government's stated intention that the Government Minute should be laid on the table of the Legislative Council within three months of the laying of the Report of the Committee to which it relates.

*Committee Proceedings*

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**Meetings** The Committee held a total of four meetings and six public hearings in respect of the subjects covered in this Report. During the public hearings, the Committee heard evidence from a total of 32 witnesses, including two Directors of Bureau and eight Heads of Department. The names of the witnesses are listed in *Appendix 3* to this Report.

2. **Arrangement of the Report** The evidence of the witnesses who appeared before the Committee, and the Committee's specific conclusions and recommendations, based on the evidence and on its deliberations on the relevant chapter of the Director of Audit's Report, are set out in Part 4 below.

3. The video and audio record of the proceedings of the Committee's public hearings is available on the Legislative Council website.

4. **Acknowledgements** The Committee wishes to record its appreciation of the cooperative approach adopted by all the persons who were invited to give evidence. In addition, the Committee is grateful for the assistance and constructive advice given by the Secretary for Financial Services and the Treasury, the Legal Adviser and the Clerk. The Committee also wishes to thank the Director of Audit for the objective and professional manner in which he completed his Report, and for the many services which he and his staff have rendered to the Committee throughout its deliberations.

## **A. Introduction**

The Audit Commission ("Audit") conducted a review to examine the Government's efforts in the management of restored landfills.

### Background

2. Hon Kenneth LEUNG declared that he was a member of the Craigengower Cricket Club.

3. There are 16 landfill sites in Hong Kong, of which three large strategic landfills are operating and used for final waste disposal<sup>1</sup> and 13 relatively small landfills<sup>2</sup> were closed between 1975 and 1996. These 13 closed landfills were not designed with contemporary environmental standards and demand dedicated and effective efforts of restoration over some 30 years or more aftercare period. The landfilled waste is continuously undergoing biodegradation and the generated landfill gas and leachate<sup>3</sup> present environmental and safety hazards to the surrounding areas. The landfills are also subject to differential ground settlement during the process.<sup>4</sup>

4. Restoration of the 13 closed landfills comprises two stages: (a) restoration works which include construction and installation of restoration facilities;<sup>5</sup> and (b) aftercare work which would commence after completion of restoration works

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<sup>1</sup> The three operating strategic landfills are Southeast New Territories Landfill in Tai Chik Sha of Sai Kung District, Northeast New Territories Landfill in Ta Kwu Ling of North District and West New Territories Landfill in Nim Wan of Tuen Mun District.

<sup>2</sup> For location of 13 closed landfills, see Figure 1 in paragraph 1.2 of the Director of Audit's Report.

<sup>3</sup> Landfill gas is malodorous and potentially asphyxiating, flammable and explosive. Leachate is highly polluting and, if not properly controlled, may seriously contaminate water bodies due to direct discharge of leachate.

<sup>4</sup> Municipal solid waste disposed of at landfills does not exhibit homogenous geotechnical properties as it is subject to continuing biological decomposition process, which results in differential ground settlement of the landfill surface which may lead to slope instability problems.

<sup>5</sup> Restoration facilities include: (a) leachate management systems to extract, collect, treat and dispose of leachate; (b) landfill gas management systems to control gas emission and prevent off-site gas migration; (c) engineered capping layers and surface water drainage system to reduce infiltration of rain water into the waste mass and thereby reducing the amount of leachate generated; and (d) improvements to slope stability, landscaping of landfill sites and other ancillary engineering works.

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to ensure that the landfill is maintained in a safe condition and is environmentally acceptable for appropriate future beneficial uses.<sup>6</sup>

5. The Environmental Protection Department ("EPD") has used a design-build-operate ("DBO") form of contract for the restoration and management of the 13 closed landfills under which a contractor is responsible for the design and construction of restoration facilities and aftercare of a landfill for 30 years after completion of the restoration facilities. The construction and installation of restoration facilities at the 13 landfills were completed between 1997 and 2006 at a total capital cost of \$1,317.7 million and such facilities have been commissioned. The total actual operating cost of the aftercare work was \$67.9 million in 2016-2017.

6. The 13 restored landfills occupy a total area of 320 hectares ("ha"). According to EPD, except for areas occupied by restoration facilities required for aftercare work, all the remaining areas would in principle be available for afteruse as long as the nature of afteruse projects could fulfill the specified conditions and constraints at the remaining area.<sup>7</sup> In light of the many development restrictions at restored landfills, recreational use (e.g. public parks and sitting-out areas) is considered the most suitable afteruse option at these landfills. As of February 2018, the current and planned afteruse at the 13 restored landfills occupied a total area of about 113 ha (35% of 320 ha).

7. With delegated authority from the Lands Department ("LandsD") under the Land (Miscellaneous Provisions) Ordinance (Cap. 28), EPD grants land licences to applicants (mainly non-governmental organizations ("NGOs") and National Sports Associations) to develop and operate recreational facilities at restored landfills. As of December 2017, EPD had granted five land licences to five licensees for developing and operating recreational facilities at four restored landfills (as two land

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<sup>6</sup> Aftercare work includes operation and maintenance of leachate management systems and landfill gas management systems, environmental monitoring and auditing and maintenance of landscape and site infrastructure.

<sup>7</sup> In general, flat area of a restored landfill is considered readily available and suitable for afteruse development, while slopes render difficulties to afteruse project proponents as they have to deal with technical risk management and administrative issues, such as implementing slope stabilization measures and conducting natural terrain hazard assessment and/or slope failure analysis.



licences were issued for one landfill) on a self-financing basis for use by the general public and/or members of the licensees.<sup>8</sup>

8. The 2014 Policy Address announced that the Government had earmarked \$1 billion to set up the Restored Landfill Revitalization Funding Scheme ("Funding Scheme") to expedite the development of recreational facilities or other innovative proposals at restored landfills. According to EPD, 6 of the 13 restored landfills have been developed for public use or reserved for conservation or other uses. The Funding Scheme covers the remaining seven restored landfills.<sup>9</sup>

### The Committee's Report

9. The Committee's Report sets out the evidence gathered from witnesses. The Report is divided into the following parts:

- Introduction (Part A) (paragraphs 1 to 13);
- Aftercare of restored landfills (Part B) (paragraphs 14 to 29);
- Development of government recreational facilities at restored landfills (Part C) (paragraphs 30 to 100);
- Monitoring of non-governmental bodies' afteruse facilities at restored landfills (Part D) (paragraphs 101 to 123); and
- Conclusions and recommendations (Part E) (paragraphs 124 to 126).

### Public hearings

10. The Committee held three public hearings on 14 and 26 May and 26 June 2018 respectively to receive evidence on the findings and observations of the Director of Audit's Report ("Audit Report").

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<sup>8</sup> See Table 5 in paragraph 4.3 of the Director of Audit's Report for details of the five licences granted by EPD.

<sup>9</sup> For details of the restored landfills covered under the Funding Scheme, see Table 1 in paragraph 1.11 of the Director of Audit's Report.

### Site Visit

11. On 26 May 2018, the Committee visited the Gin Drinkers Bay Landfill, Kwai Chung Park and Wan Po Road Pet Garden ("the Pet Garden") to better understand the development of government recreational facilities at restored landfills.



*The Chairman and members of the Public Accounts Committee visited the leachate treatment facilities at the Gin Drinkers Bay Landfill to better understand its operation.*

### Speech by Director of Audit

12. **Mr David SUN Tak-kei, Director of Audit**, gave a brief account of the Audit Report at the beginning of the Committee's public hearing held on 14 May 2018. The full text of his speech is in *Appendix 4*.

### Opening statement by Secretary for the Environment

13. **Mr WONG Kam-sing, Secretary for the Environment**, made an opening statement at the beginning of the Committee's public hearing held on 14 May 2018, the summary of which is as follows:

- restored landfills were of a special nature and substantially different from ordinary land pieces as they consisted of numerous waste slopes and were subject to continuous ground settlement. The development

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of afteruse projects in restored landfills had to overcome very challenging constraints and technical difficulties. Technical risk management including risk assessments on slope, natural terrain and landfill gas hazards was necessary to ensure that a few suitable land pieces in restored landfills would be made available for beneficial uses without affecting the aftercare work;

- currently, 16 projects of different uses having completed development or under planning for construction took up about 35% of the total area of restored landfills (i.e. about 112.6 ha), and a predominant portion of the remaining land (about 90%) with slopes and trees could hardly be used for other development purposes. It was estimated that there were now about 12.9 ha of flat ground and platform which was easy to develop (representing about 6% of the remaining land or about 4% of the total area of restored landfills) and yet to be designated for specific use;
- Batch 1 of the Funding Scheme had been launched in 2015, under which interested non-profit-making organizations or National Sports Associations might apply for funding to develop four sites with a total area of 8.4 ha in three restored landfills into recreational facilities or for other innovative use. EPD would continue to proactively identify suitable uses for the remaining 9.4 ha of land (i.e. representing about 2.9% of the total area of restored landfills) in conjunction with other relevant departments and consult the community;
- in implementing the Funding Scheme, EPD enhanced consultation with the relevant District Councils ("DCs") during the process to gain recognition with the community. Despite a longer time required, such consultation and discussion were necessary as the Government could have a thorough understanding of the opinions of the relevant DCs and residents before making decisions;
- currently all the licensees of the land licences granted for the development and operation of the five afteruse projects were on a self-financing basis. The Administration's priority was to ensure that these licensees could continue to carry out construction works of the afteruse facilities or maintain the normal operation of the relevant facilities for the general public or users. The inclusion of overly stringent licensing conditions was likely to discourage the existing licensees from continuing to provide such facilities. EPD would collaborate with the relevant bureaux and departments ("B/Ds") to

study the implementation of the recommendations on stepping up monitoring of land licence conditions in the Audit Report; and

- regarding the management and supervision of contractors of restoration facilities, EPD conducted a comprehensive review of the monitoring system for waste treatment facilities in 2016. A number of improvement measures were introduced subsequently.

The full text of Secretary for the Environment's opening statement is in *Appendix 5*.

## **B. Aftercare of restored landfills**

14. The Committee noted that there were various statutory and contractual requirements for compliance by landfill restoration contractors (paragraph 2.4 of the Audit Report refers), and enquired about the commonalities and differences between these requirements and penalty involved, in particular whether stricter control was imposed under the landfill restoration contracts.

15. **Director of Environmental Protection** provided related information in his letter dated 25 May 2018 (*Appendix 6*) listing out the requirements in the licences issued under the Water Pollution Control Ordinance (Cap. 358) ("WPCO"), the Technical Memorandum Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (Cap. 358AK) and the contractors' obligations under the landfill restoration contracts. **Mr Donald TONG Chi-keung, Director of Environmental Protection** replied at the public hearings and further supplemented in the abovementioned letter (*Appendix 6*) that:

- the requirements under the landfill restoration contracts were more stringent than the statutory requirements stipulated under WPCO and covered a wider range and additional non-statutory requirements. Specifying such requirements under the contracts would allow the contractors to discover problems early and take proactive actions and implement mitigation measures so as to avoid causing environmental pollution and/or breaching the law. In case of any non-compliance with the contractual requirements, the contractor would not only be penalized by way of deduction of operation payment but also required to increase the monitoring frequency until the contractual requirements were complied with;

- WPCO provided general controls on the discharge of polluting matters in waters of Hong Kong by any person. These controls aimed to broadly cover offences of all kinds and those without specific discharge routes. The Water Pollution Control (General) Regulations (Cap. 358D) ("WPC(G)R") provided more specific controls on WPCO licensees (generally involving facilities with regular discharges such as wastewater treatment plants and restaurants). Any discharge of effluents in breach of the terms and conditions specified in the licence was an offence under WPC(G)R liable to prosecution, irrespective of whether the discharge involved polluting matters or not; and
- the respective maximum penalties of offences under WPCO and WPC(G)R were different with details provided in *Appendix 6*.

16. The Committee enquired whether EPD would still pursue civil remedies if contractors committed an offence and had resulted in a fine or imprisonment, and sought details regarding the demerit point system mentioned in paragraph 2.33 of the Audit Report.

17. **Director of Environmental Protection** and **Ms Betty CHEUNG Miu-han, Assistant Director (Environmental Infrastructure) of Environmental Protection Department** replied at the public hearings and **Director of Environmental Protection** supplemented in his letter dated 25 May 2018 (*Appendix 6*) that:

- Environmental Infrastructure Division of EPD was responsible for monitoring the operational performance of the contractors while Environmental Compliance Division of EPD was responsible for enforcing relevant environmental legislation. Both divisions under EPD would take actions against contractors who had violated contractual and statutory requirements accordingly. There was no contractual clause in the current landfill restoration contracts which stipulated that the contractors' conviction results could be used as evidence for deducting points under the demerit point system. EPD agreed to consider reviewing introducing such mechanism for future contracts with relevant government tendering boards. EPD would need to consider the possible impact, for example, whether it was consistent with the contractual mechanisms of other B/Ds;
- both the contractor's non-compliance with contractual requirements and convictions would be reflected in the performance reports prepared by

EPD. Such performance assessment would directly affect the contractor's grading when bidding new government contracts (i.e. not limited to new contracts under EPD) and the opportunities for future appointments; and

- the demerit point system was only for calculating payment deduction due to non-compliances with contractual requirements. EPD's five landfill restoration contracts all included a deducting point system which specified the number of points and the maximum points to be deducted in a month for each specified non-compliance with the environmental and pollution control requirement. Taking the Pillar Point Valley Landfill ("PPVL") contract as an example, if the total nitrogen level of leachate discharge sample exceeded the specified limit, one point would be deducted and the maximum number of points to be deducted for various non-compliances in a month was 35.

18. The Committee sought the reasons for EPD to adopt a DBO form of contract for the restoration and management of the 13 landfills and whether such form of contract would hinder the effectiveness of the contract termination clause as a last resort for consistent poor standard of performance of contractors.

19. **Director of Environmental Protection** replied at the public hearings and supplemented in his letter dated 25 May 2018 (*Appendix 6*) that:

- in DBO contracts which had been adopted since 1980s, requirements on the performance of the waste facilities and their relevant environmental parameters (such as waste handling capacity, odour control, wastewater discharge and air emission standards, etc.) were stipulated. A specialized contractor had to choose the most appropriate design and operational mode to meet the contractual requirements;
- the DBO concept was that the Government would pay for the construction cost while the contractor carried out design and construction works for the facilities in accordance with the requirements set out by the Government as well as operating the facilities in accordance with the contractual operational requirements. For restored landfill projects which were unique in nature and required specialized technologies and equipment, EPD considered that DBO

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form of contract should be adopted. EPD's waste facilities awarded under DBO contract had been operating smoothly in general; and

- the landfill restoration contracts stipulated that the Government had the right to terminate the contracts anytime by giving the contractor 9 or 12 months advance notice in writing (i.e. depending on the relevant clauses of various contracts). When deciding whether to terminate early the contract, the Government would take into account a host of factors including but not limited to whether the non-compliances with contractual/statutory requirements involved any systemic fault of the contractor; the contractor's performance and whether the contractor had promptly taken responsible and appropriate follow-up actions upon receipt of EPD's warning; whether the contractor had intentionally created loopholes/committed non-compliances with the contractual and statutory requirements so as to indirectly avoid his legal and contractual obligations; potential risks associated with litigation and contractual claims made by the contractor; implications of early contract termination on the community in relation to environmental and waste management; and how to ensure there were other companies with suitable professional background and qualifications to participate in the re-tendering, etc.

20. Noting that the Administration would carry out an environmental review for each restored landfill every five years to determine whether the post-completion aftercare work should continue, the Committee enquired about the details of the first review conducted for PPVL and reasons for conducting the second review six years afterwards (Note 15 in paragraph 2.7 of the Audit Report refers).

21. **Assistant Director (Environmental Infrastructure) of Environmental Protection Department** replied at the public hearings and **Director of Environmental Protection** supplemented in his letter dated 25 May 2018 (*Appendix 6*) that:

- the main objective of conducting environmental review was to understand the progress of the aftercare work and the environmental conditions of the restored landfill. A restored landfill was deemed to be fully restored and aftercare needed not continue when the following conditions were satisfied:

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- (a) the untreated landfill gas had a methane content of less than 1% by volume; and
- (b) the quality of untreated leachate met the relevant standards before discharging to the government sewers;
- the first environmental review for PPVL commenced in early 2011 and was completed in April 2011. During the review, EPD gathered the past environmental monitoring data of the restored landfill (from July 2006 to December 2010); and
- for PPVL's second environmental review (which was supposed to commence in the first half of 2016), in view of the nine-month overhaul and shutdown period for the leachate treatment plant ("LTP") from May 2016 to January 2017, related water quality monitoring was rescheduled to early 2017. Due to prolonged heavy rainfall in 2017, significant amount of leachate was generated on site, which hindered the operation of LTP, and the contractor had to continue with follow-up remedial works. EPD considered it more appropriate to conduct the second environmental review and collect all relevant data from 2011 to 2018 (including the leachate generated in 2018 wet season) only after the maintenance works were completed and LTP resumed normal operation, so as to comprehensively and effectively review the environmental conditions of PPVL. EPD expected to complete the concerned review by end of 2018.

22. Referring to paragraphs 2.8 to 2.13 of the Audit Report, EPD conducted investigations on complaints received in January to April 2016 regarding operations of PPVL facilities, and revealed a long period of non-compliances with statutory and contractual requirements at PPVL by Contractor A ("PPVL incident"). The Committee enquired how EPD conducted monitoring of the contractor's performance and compliance with contractual requirements.

23. **Assistant Director (Environmental Infrastructure) of Environmental Protection Department** replied at the public hearings and **Director of Environmental Protection** supplemented in his letter dated 25 May 2018 (*Appendix 6*) that:

- all restored landfill contracts required relevant contractors to carry out specific environmental monitoring and take environmental samples



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regularly for testing by independent qualified laboratories. The testing reports would be submitted to EPD for review to prove that the landfill operation complied with contractual requirements; and

- EPD staff would also conduct regular inspections and complete the daily operation checklists for cross-checking the monitoring results reported in the contractor's aftercare monthly reports (which provided information including monitoring data on leachate discharge, landfill gas and ground settlement). In case of non-compliances or abnormalities, EPD staff would follow up swiftly with the contractor and handle the issue in strict accordance with contractual requirements.

24. The Committee noted from paragraph 2.15 of the Audit Report that on-site monitoring at PPVL based on regular sampling, daily visual inspections and manual checking of contractors' operating data were conducted by EPD staff prior to the PPVL incident. The Committee enquired why the PPVL incident was not detected and reasons of not conducting round-the-clock monitoring prior to the incident.

25. **Assistant Director (Environmental Infrastructure) of Environmental Protection Department** replied at the public hearings and **Director of Environmental Protection** supplemented in his letter dated 25 May 2018 (*Appendix 6*) that:

- prior to the PPVL incident, EPD had been monitoring the contractors' compliance with the contractual requirements mainly through the following means:
  - (a) carrying out regular inspections and completing the daily operation checklists by on-site staff for cross-checking the monitoring results reported in the contractors' aftercare monthly reports; and
  - (b) reviewing the aftercare monthly reports submitted by contractors;
- EPD's daily operation inspection records did not reveal any contractor's non-compliance prior to the PPVL incident. Under the PPVL contract, there was no requirement for the contractor to keep the data record of flare temperature of the landfill gas flaring plant ("LGP")/landfill gas utilization plant for submission to EPD. After the receipt of complaints in January 2016, EPD had requested the

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contractor to provide daily log sheets covering 973 days from January 2013 to August 2015 for checking. However, daily log sheets for 299 days were found missing and one daily log sheet was found undated. EPD could not take further actions as failure to provide data record of the flare temperature of the LGP/landfill gas utilization plant was not a breach of contractual or statutory requirements;

- all past environmental monitoring results had showed that the restored landfills were operating normally and the contractors complied with the contractual and relevant statutory requirements. In allocating manpower resources to manage the various tasks at the restored landfills, EPD had taken into consideration their relatively low environmental risk and effective use of manpower resources; and
- subsequent to a review on the robustness of environmental monitoring practices at its waste facilities by EPD in 2016 arising from the PPVL incident, EPD had implemented improvement measures to strengthen site supervision of contractors in the restored landfills, including updating the operation manual and daily operation checklists, installation of advanced equipment in PPVL and other restored landfills with LTP, LGP and landfill gas utilization plant; conducting surprise checks on weekdays and weekends; adopting random inspection mode; and identifying new sampling points of leachate discharge, etc. Installation of advanced equipment, including upgrading data logging systems, could provide real-time monitoring of the operating data of LTPs, LGP and landfill gas utilization plants, obviating the need for cross-checking contractors' site records with aftercare monthly reports.

26. According to a statement made by Assistant Director (Environmental Infrastructure) of Environmental Protection Department at the public hearings, sampling points for collecting leachate discharge from PPVL for testing were stipulated in the tender documents which included effluents discharged from nearby settlements (such as offices). The Committee enquired about the justifications for specifying sampling locations which might affect the accuracy of sampling tests, how EPD could ensure concentration of the discharge was in compliance with statutory and contractual requirements if sampling points were improperly selected and how the new sampling points were chosen.

27. **Assistant Director (Environmental Infrastructure) of Environmental Protection Department** replied at the public hearings and **Director of Environmental Protection** supplemented in his letter dated 25 May 2018 (*Appendix 6*) that when the PPVL contract was awarded, the location of leachate sampling points was not specified as the design proposal of LTP had yet to be finalized. At a later stage, the sampling location was designated at the terminal foul water manhole of the site (i.e. the last discharge point prior to entering to the public foul sewer), where the treated leachate (taking up more than 99.5% of the total discharge) was mixed with sewage from the site office (taking up less than 0.5% of the total discharge). The review conducted in 2016 arising from the PPVL incident concluded that although the effluent in the sampling point could reflect the quality of effluent discharge into the public sewer, it might not reflect accurately the quality of treated leachate discharge from LTP. EPD changed the sampling point location so as to ensure further that the treated leachate discharge would be in compliance with both licence and contract requirements.

28. The Committee asked about the latest installation progress of advanced equipment, especially on "reviewing and installing automatic sampling device/on-line analyzer" which was still in the stage of quotation exercise, and reasons for the delay as depicted in Table 3 in paragraph 2.21 of the Audit Report.

29. **Assistant Director (Environmental Infrastructure) of Environmental Protection Department** replied at the public hearings and **Director of Environmental Protection** supplemented in his letter dated 25 May 2018 (*Appendix 6*) that:

- EPD had completed the installation of surveillance cameras at restored landfills with both LTP and LGP except Jordan Valley Landfill.<sup>10</sup> As at 21 May 2018, the advanced equipment installation progress at the five restored landfills with both LTP and LGP was as follows:
  - (a) reviewing and upgrading data monitoring system:
    - EPD had upgraded the data monitoring system at PPVL and the Jordan Valley Landfill. Regarding the Tseung Kwan O

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<sup>10</sup> EPD considered it not necessary to install surveillance cameras at the Jordan Valley Landfill because LTP of the Jordan Valley Landfill adopted biological technology for leachate treatment, and the respective restoration contract did not stipulate the operation temperature requirement for LTP.

Stage II/III Landfill and the Gin Drinkers Bay Landfill where data monitoring system had not yet been upgraded, the contractor had arranged an overseas specialist to carry out on-site inspection in mid May 2018 to review if such upgrading was compatible with existing LTP. It was anticipated that the results and study report would be submitted to EPD on or before the 4<sup>th</sup> quarter of 2018 to determine whether the existing systems at the two landfills could be upgraded and, if affirmative, the expected upgrading time; and

- as LTP at the Ma Yau Tong Central Landfill operated in wet seasons only, EPD considered it not economical to install data monitoring system; and

(b) reviewing and installing automatic sampling device/on-line analyzer:

- EPD had installed automatic sampling devices at the Jordan Valley Landfill and Ma Yau Tong Central Landfill. For PPVL, the Tseung Kwan O Stage II/III Landfill and Gin Drinkers Bay Landfill, the automatic sampling devices had been delivered to the sites; and
- EPD considered that the current arrangement of delivering samples as collected from auto-sampling devices to laboratory for testing could more effectively monitor the operation of LTPs.

### **C. Development of government recreational facilities at restored landfills**

30. Referring to Note 39 in paragraph 3.2 of the Audit Report, the Committee sought details regarding the "sub-allocation" arrangement between EPD and the Leisure and Cultural Services Department ("LCSD"), difference in role, division of work and responsibilities between EPD, LCSD and works agents and whether EPD would provide technical advice to other departments when developing restored landfills.

31. **Director of Environmental Protection** replied in his letter dated 11 June 2018 (*Appendix 7*) that LandsD allocated land at restored landfills to EPD via temporary government land allocations to facilitate EPD to carry out restoration

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works and aftercare work. According to the relevant conditions in the temporary government land allocations, EPD might, subject to LandsD's approval, sub-allocate portions of the sites to other government departments, including LCSD for developing recreational facilities. Throughout the design, construction and operation periods of the recreational facilities, EPD would continue to carry out aftercare work such as management and maintenance of all restoration facilities and environmental monitoring. EPD had provided LCSD and other works agents with relevant information of restored landfills and professional advice (such as loading limits, settlement changes, potential challenges on project coordination and interface and vetting of landfill gas hazard assessments submitted by client departments) in order to overcome various constraints and technical difficulties.

32. Using Table 4 in paragraph 3.2 of the Audit Report as illustration, **Director of Home Affairs** and **Director of Leisure and Cultural Services** provided related information in their letters dated 15 June 2018 (*Appendix 8*) and 19 June 2018 (*Appendix 9*) respectively that:

- the Pet Garden, Ma Yau Tong West Sitting-out Area and Ma Yau Tong Central Sitting-out Area projects (items 2, 5 and 6 respectively) were District Minor Works Projects under which LCSD was the lead department during the construction stage and was responsible for working with the respective DCs and awarding the works contracts on the advice of the Home Affairs Department ("HAD"). HAD was the project manager and administrator of the term consultant and EPD was the management authority of the restored landfills;
- the Kwai Chung Park, Jordan Valley Park and Ngau Chi Wan Park (i.e. items 1, 3 and 7 respectively) were capital works projects. LCSD as the client department was mainly responsible for providing user requirements of the proposed projects to the works agent and/or its consultant/contractor for design and construction works and to seek funding for implementation of the projects; and
- LCSD was responsible for venue management.

33. In reply to the Committee's enquiry on the assignment of different departments as works agents for different projects (Table 4 in paragraph 3.2 of the Audit Report refers), **Director of Environmental Protection** explained in his letter dated 11 June 2018 (*Appendix 7*) that the development of the seven recreational projects mentioned in Table 4 were led by the relevant policy bureaux with their

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respective departments acting as client departments responsible for the planning and development of the recreational projects, including consultation with DCs and other stakeholders, funding application and facilities operation. The works agents were responsible for design and construction of the recreational facilities projects. The client departments and works agents for the seven recreational facilities were as follows:

<b>Recreational Facilities Project</b>		<b>Client Department</b>	<b>Works Agent</b>
1	Kwai Chung Park	LCSD	Architectural Services Department ("ArchSD")
2	Wan Po Road Pet Garden	LCSD	HAD
3	Jordan Valley Park	LCSD	ArchSD
4	Sai Tso Wan Recreation Ground	Home Affairs Bureau ("HAB")	EPD
5	Ma Yau Tong West Sitting-out Area	LCSD	HAD
6	Ma Yau Tong Central Sitting-out Area	LCSD	HAD
7	Ngau Chi Wan Park	LCSD	ArchSD

For Sai Tso Wan Recreation Ground, which was the first recreational facility developed at a restored landfill in Hong Kong, EPD acted as the works agent to develop the project through a DBO contract arrangement.

34. **Director of Architectural Services** supplemented in her letter dated 11 June 2018 (*Appendix 10*) that depending on the works nature, ArchSD would usually be the works agent for LCSD's capital works projects. For the Jordan Valley Park project and Ngau Chi Wan Park project, the role of ArchSD was the works agent and the work involved:

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- assisting user departments in developing their requirements;
- appointing consultants to carry out design and construction supervision for the facilities to meet users' requirements and Government's needs;
- appointing contractors to carry out construction of the facilities; and
- inspecting works to ensure the facilities were developed up to standard.

35. The Committee enquired whether there was a standing mechanism for LCSD, HAD and ArchSD to inform EPD of the progress of the development of recreational projects at restored landfills and findings of the studies/surveys conducted on the landfills by consultants/contractors commissioned by these departments.

36. **Director of Architectural Services** replied in her letter dated 11 June 2018 (*Appendix 10*) that there was no standing mechanism between ArchSD and EPD. Normally during implementation of projects at restored landfills, ArchSD with its consultant would closely liaise with EPD and its contractor regarding progress, design and construction issues that would affect the aftercare facilities as appropriate. ArchSD would submit those studies and surveys that were related to landfill aftercare facilities to EPD for comments, meetings and joint site visits would be conducted for resolving design issues. EPD had also been informed about the findings/studies related to the landfill aftercare facilities during the whole process of design development. The landfill gas hazard assessment and the design details of the proposed afteruse facilities had been submitted to EPD for comments.

37. **Director of Leisure and Cultural Services** advised in her letter dated 19 June 2018 (*Appendix 9*) that there was no standing mechanism for LCSD to inform EPD of the progress of the development of recreational projects at restored landfills. Given the complexity of the landfill sites, LCSD might seek advice from EPD from time to time during planning and implementation of the projects wherever necessary.

Kwai Chung Park

38. The Committee sought information on the involvement of relevant stakeholders, such as relevant B/Ds, DCs and local communities when deciding the

development of the Kwai Chung Park in the restored Gin Drinkers Bay Landfill, and whether EPD/ArchSD had provided technical advice to LCSD regarding the site constraints.

39. **Director of Environmental Protection** replied at the public hearings and supplemented in his letter dated 11 June 2018 (*Appendix 7*) that:

- EPD provided LCSD and other works agents with technical advice and relevant information of restored landfills. In 2001 and 2002, technical advice was provided on LCSD's proposals of a football training centre and grass skiing ground;
- between June and October 2013, EPD provided technical advice on the proposed the Kwai Chung Park, including that LCSD and ArchSD needed to: (a) consider the maximum loading capacity and differential ground settlement at the Gin Drinkers Bay Landfill; (b) carry out landfill gas hazard assessment and adopt mitigation and safety precaution measures in accordance with the assessment findings; and (c) consider the large sloping areas and large number of monitoring wells within the Gin Drinkers Bay Landfill; and
- EPD staff also attended meetings of the working group on development of the Kwai Chung Park under Kwai Tsing DC; briefed DC members on the aftercare work and the environmental monitoring conducted at the restored landfill; and arranged on-site inspection by DC members, LCSD and other relevant government departments.

40. **Mrs Sylvia LAM YU Ka-wai, Director of Architectural Services** replied at the public hearings and supplemented in her letter dated 11 June 2018 (*Appendix 10*) that ArchSD provided advice to LCSD on the technical aspects highlighted as follows:

- preliminary landfill gas hazard assessment would need to be conducted in the feasibility study stage for submission to EPD and the detailed assessment would be required for completion before finalization of detailed design;
- various site constraints would need to be addressed such as large areas of slopes would limit development area and increase maintenance cost; widespread gas monitoring wells in the site would restrict the proposed



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project development. ArchSD recommended LCSD to reconsider incorporating the other flatland into the site (e.g. the bicycle motocross ("BMX") Park and temporary cricket grounds) for better planning of use or review the site area by confining to the flatland gentle slope areas; and

- in view of the site constraints, functional areas and spaces would be fragmented, and this would induce security and management problems.

41. In reply to the Committee's enquiry on the standard workflow in planning recreational facilities such as the Kwai Chung Park, **Ms Michelle LI Mei-sheung, Director of Leisure and Cultural Services** replied at the public hearings and supplemented in her letter dated 19 June 2018 (*Appendix 9*) that:

- in planning capital works projects for recreational and sports facilities, LCSD would normally review the provision and usage of existing facilities in the district, local demand and take into account the recommendations of the Hong Kong Planning Standards and Guidelines, and then draft the scope of works;
- initial comments from HAB would be sought and the relevant DC(s) would also be consulted. After securing support from DC(s) on the proposed facility, LCSD would prepare a Project Definition Statement for HAB's consideration and issuance to ArchSD for conducting a technical feasibility study and preparing a Technical Feasibility Statement in accordance with the established procedures for capital works projects; and
- upon completion of the Technical Feasibility Statement, ArchSD might carry out various technical assessments and start working on the preliminary design for the project, so that the Government might apply for funding to take forward the project. In the planning stage, LCSD would from time to time consult relevant works agent wherever necessary. If the site involved a restored landfill, EPD would also be consulted.

**Director of Leisure and Cultural Services** provided a consultation paper for DC on the Kwai Chung Park in *Appendix 9* for the Committee's reference.

42. Noting from paragraphs 3.5 and 3.14(d) of the Audit Report that LCSD had agreed to step up efforts to follow up the recommendations contained in the Director of Audit's Report No. 60 in 2013 by devising an action plan for the development of the Kwai Chung Park, the Committee asked for a chronology of actions taken and the length of delays, if any, with explanation.

43. **Director of Leisure and Cultural Services** replied at the public hearings and supplemented in her letter dated 19 June 2018 (*Appendix 9*) that:

- LCSD consulted the District Facilities Management Committee of Kwai Tsing DC in June and December 2013 on the development of the Kwai Chung Park. The Committee gave consent to the development of recreation and sports facilities, including a natural turf cricket cum football pitch, a golf driving range with 30 golf driving bays, a landscaped garden, a jogging trail, a fitness corner, a children's playground, a community garden and a pet garden on the site. On this basis, LCSD started planning work and prepared a Project Definition Statement for approval by HAB. In May 2014, HAB issued the Project Definition Statement for ArchSD to conduct technical feasibility study on the proposed facilities in the restored landfill;
- in July 2014, ArchSD informed HAB and LCSD that due to site limitations, the site could not physically accommodate the proposed golf driving range and thus the proposed project scope had to be revised;
- to put the Park into gainful use, HAB had given policy support and co-ordinated related issues on the land use application for temporary cricket grounds on a short term basis since early 2015. In March 2016, EPD granted a three-year Government Land Licence to Licensee A for the use of about 4.5 ha of relatively flat area to develop temporary cricket grounds. During this period, LCSD worked with HAB and EPD on the relevant matters; and
- in November 2016, LCSD reported the progress of the Kwai Chung Park project to the Kwai Tsing DC and explained the technical limitations in details to the members. In September 2017, LCSD and Kwai Tsing DC members discussed the proposed facilities and estimated programme of the project in further details, and finally agreed to implement the project by phases.

44. With reference to Appendix G of the Audit Report, the Committee enquired about the reasons for not pursuing a football training centre and the options mentioned in items 11 (a) to (e).<sup>11</sup>

45. **Director of Leisure and Cultural Services** replied at the public hearings and supplemented in her letter dated 19 June 2018 (*Appendix 9*) that:

- there were various site constraints for the proposal of the construction of a football training centre at the proposed Kwai Chung Park site, mainly as follows :
  - (a) the orientation of the football pitch proposed in the design did not meet the requirements of the Federation Internationale de Football Association/Hong Kong Football Association for standard football pitches;
  - (b) with its size limited by the surrounding environment and slopes, the site could not accommodate a standard 11-a-side football pitch with adequate safety margin;
  - (c) it might not be feasible to provide the pitch with floodlights as it would involve the construction of at least four heavy lighting columns with deep foundation, which would probably disturb the underlying geomembrane capping;
  - (d) irregular differential settlement was detected at the site; and
  - (e) technical difficulties in slope treatment; and
- the options mentioned in items 11 (a) to (e) of Appendix G were not pursued mainly due to the following: a large area of the project site was covered by slopes leaving little usable area; the entire stretch of land was covered in a capping layer and installed with facilities such as landfill gas collection pipes, gas extraction wells and leachate collection pipes, which posed challenges to the design of the venue and

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<sup>11</sup> The development options were:

- (a) opening part of the Park facing Tsuen Wan Road to the public;
- (b) a community garden cum sitting-out area in the Park;
- (c) a model car racing track in the Park;
- (d) a multi-purpose lawn in the Park; and
- (e) developing part of the Park into a leisure ground (including a cycling ground).

construction of superstructures. Another factor for consideration was the availability of resources at the time. As the facilities of the Park were built a long time ago, some of them were rather dilapidated, not meeting the prevailing safety standards. These proposed projects were shelved due to the high cost involved, which would probably exceed the funding ceiling for minor building works.

46. Regarding the proposed golf driving range as mentioned in paragraph 3.6 of the Audit Report, the Committee enquired about the justifications for the proposal, whether advice had been sought from ArchSD or EPD beforehand and references were drawn from previous experience when exploring the development of football training centre and other development options between 2001 and 2009.

47. **Director of Leisure and Cultural Services** replied at the public hearings and supplemented in her letter dated 19 June 2018 (*Appendix 9*) that during the consultation process with Kwai Tsing DC at a meeting held on 18 June 2013, District Facilities Management Committee of Kwai Tsing DC agreed that the Kwai Chung Park was a site suitable for development of a golf driving range. LCSD had consulted EPD before submitting the proposal, and had made reference to the past Kwai Chung Park development options and comments of EPD.

48. Referring to paragraphs 3.7, 3.10 and 3.11 of the Audit Report, ArchSD informed HAB/LCSD in 2014 and 2017 that a landfill gas hazard assessment should be conducted before proceeding with the Technical Feasibility Statement and was concerned whether the project could be launched before 2022. The Committee queried why EPD/ArchSD expressed "no objection" in June 2017 to HAB/LCSD's plan to carry out the aforesaid assessment at detailed design planning stage despite that the assessment findings might affect the completion time and cost of the project.

49. **Director of Environmental Protection** replied at the public hearings and supplemented in his letter dated 11 June 2018 (*Appendix 7*) that:

- according to the "Landfill Gas Hazard Assessment Guidance Note" ("Guidance Note") and the "Professional Persons Environmental Consultative Committee Practice Note PN 3/96", when developing any piece of land within a landfill site or within a 250-metre zone around any landfill site, the project proponent and/or the works agent should

adopt suitable precautionary measures to minimize the risk due to the lateral migration of landfill gas;

- as per the Guidance Note, the landfill gas hazard assessment often comprised two stages. The first stage, or "preliminary qualitative assessment", was carried out at the planning stage of a development project. While its assessment scope would be constrained by the level of available detail about the proposed development, the assessment result might be used to determine the in-principle acceptability of a proposed development and to identify the scope of any further investigations which might be required to complete the assessment; and
- EPD expressed no objection to LCSD in January 2015 and June 2017 making reference to the practices adopted in previous relevant examples, i.e. to carry out preliminary qualitative assessment for the Kwai Chung Park project in accordance with the Guidance Note and to review and reassess in detail during the project's detailed design stage. Based on past experience in developing similar projects, EPD opined that such arrangements in general would not affect the project's completion date and cost.

50. **Director of Architectural Services** replied at the public hearings and supplemented in her letter dated 11 June 2018 (*Appendix 10*) that ArchSD had indicated to LCSD that it had no strong view on conducting landfill gas hazard assessment at a more detailed planning stage, but also advised LCSD that in case significant changes to the scope, design and construction of the project were necessary at a more detailed design stage due to the finding of the assessment, there would be time and cost implications which could have been dealt with or mitigated earlier during the preliminary qualitative assessment stage.

51. **Mr Jack CHAN Jick-chi, Under Secretary for Home Affairs** replied at the public hearings and **Secretary for Home Affairs** supplemented in his letter dated 13 June 2018 (*Appendix 11*) that HAB requested LCSD to confirm with ArchSD and EPD in early June 2017 on their views on landfill gas hazard assessment and technical feasibility study. Subsequently, ArchSD and EPD clarified that the preliminary assessment should normally be carried out after confirmation of the proposed project scope or issuance of Project Definition Statement and during the stage of technical feasibility study for completion of the Technical Feasibility

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Statement, and the detailed assessment could be carried out at the detailed design stage.

52. The Committee further asked HAB for the reasons of not conducting the landfill gas hazard assessment according to the requirement of EPD's Guidance Note (Note 43 in paragraph 3.7 of the Audit Report refers).

53. **Under Secretary for Home Affairs** replied at the public hearings and **Secretary for Home Affairs** supplemented in his letter dated 13 June 2018 (*Appendix 11*) that HAB considered that one of the crucial factors for taking forward the Kwai Chung Park project was to confirm the proposed project scope so as to facilitate ArchSD to commence technical feasibility study, including the carrying out of landfill gas hazard assessment, according to the proposed project scope. As ArchSD stated in July 2014 that the site could not accommodate the proposed golf driving range with 30 golf driving bays, HAB considered it necessary to follow up on the proposed project scope first and revise the Project Definition Statement and thus did not provide funding for LCSD at that time.

54. The Committee enquired about the reasons for ArchSD's statement that HAB should arrange funding for carrying out landfill gas hazard assessment in July 2014 despite that it had advised that the site was not suitable for the proposed golf driving range but no proposed new use was stated in HAB's Project Definition Statement (paragraph 3.7 of the Audit Report refers), and whether ArchSD was of the view that the assessment should be conducted irrespective of whether a specific use had been identified.

55. **Director of Architectural Services** replied at the public hearings and supplemented in her letter dated 11 June 2018 (*Appendix 10*) that ArchSD considered that the landfill gas hazard assessment should be conducted after the proposed project scope had been determined as the assessment should take into account the specific use on the site. ArchSD advised HAB on 10 July 2014 to review the project scope by removing the golf driving range. In order to ascertain the feasibility of the revised scope of work, it was necessary to conduct a landfill gas hazard assessment. ArchSD advised HAB/LCSD to source necessary funding such that the assessment could be carried out in good time once the project scope was confirmed.

56. Given the slow progress with a lapse of 17 years in the development of the Kwai Chung Park, the Committee enquired about the Administration's priority in developing the Park and the development timeline, and whether the Administration had considered hiring a consultant to conduct a comprehensive feasibility study and propose a list of development options for consideration by government departments and relevant stakeholders in order to speed up the process.

57. **Under Secretary for Home Affairs** replied at the public hearings and **Secretary for Home Affairs** supplemented in his letter dated 13 June 2018 (*Appendix 11*) that the Kwai Chung Park project was included in the Policy Address of January 2017 as one of the 26 projects under the Five-Year Plan for Sports and Recreation Facilities and resources had been reserved. On 18 May 2018, HAB issued the Project Definition Statement to ArchSD and also reserved funding for ArchSD to carry out landfill gas hazard assessment during the stage of technical feasibility study. Taking into account the various preparatory work and procedures, e.g. detailed design, DC consultation of the design, etc., HAB targeted to seek funding approval from the Finance Committee ("FC") of the Legislative Council ("LegCo") in the 2020-2021 legislative year for commencement of works by end 2021.

58. **Director of Leisure and Cultural Services** replied at the public hearings and supplemented in her letter dated 19 June 2018 (*Appendix 9*) that under the established mechanism for capital works projects, the client department might seek technical advice from relevant works departments regarding the project scope during the pre-planning stage wherever necessary. When considering whether, for future development of any restored landfills, it would be beneficial to hire a consultant to conduct a comprehensive feasibility study, recommend mitigation measures and propose a list of development options before the issuance of the Project Definition Statement so as to speed up the development process, as additional resources would be required for hiring a consultant, LCSD would consider the need on a case-by-case basis by assessing the project scale and resources required with reference to past experiences, and seek technical advice from ArchSD and EPD according to the established mechanism of capital works projects.

59. The Committee sought the latest development progress and action plan with timeline for Stage I and II development of the Kwai Chung Park, the target commission date of the temporary cricket grounds and whether the facilities were proposed for temporary usage only.

60. **Director of Leisure and Cultural Services** replied at the public hearings and supplemented in her letter dated 19 June 2018 (*Appendix 9*) that:

- Stage I development as endorsed by the Kwai Tsing DC meeting held on 14 September 2017 would cover areas not occupied by the temporary cricket grounds and the BMX park so as to open the Park for public use as early as possible. After the commencement of the related works, LCSD would proceed with the preparation work for the development of the areas occupied by the temporary cricket grounds and the BMX park in Stage II;
- on 15 September 2017, LCSD submitted the draft revised Project Definition Statement to ArchSD and EPD for comments. ArchSD and EPD gave their preliminary views in February and March 2018. The revised Project Definition Statement was submitted to HAB on 11 May 2018 for consideration. Subsequently, HAB issued the revised Project Definition Statement on 18 May 2018 requiring ArchSD to conduct a technical feasibility study;
- upon approval of the Technical Feasibility Statement by the Development Bureau, LCSD would request ArchSD to proceed with the design work and consult DC on the conceptual design pursuant to the established procedures for capital works projects; and
- the site of the cricket grounds at the Gin Drinkers Bay Landfill was granted to Licensee A by EPD in March 2016 under a three-year land licence. As it was the first time that cricket grounds were constructed in a landfill, the Government should be prudent to observe their operation on a temporary basis before a decision on the term of renewal was made. The current land licence would expire in March 2019 and Licensee A had already applied for its renewal for three years. The application was now being processed by government departments concerned.

**Director of Environmental Protection** advised in his letter dated 4 October 2018 (*Appendix 12*) that the cricket grounds were opened for public use on 1 September 2018.



Wan Po Road Pet Garden

61. The Committee enquired about the workflow and procedures in determining the project scope of the Pet Garden.

62. **Miss Janice TSE Siu-wa, Director of Home Affairs** replied at the public hearings and supplemented in her letter dated 15 June 2018 (*Appendix 8*) regarding the workflow of initiating the Pet Garden project as follows:

- the project proponent (in this case a DC member) prepared project statement which included the project scope, location, estimated cost, etc;
- under District Minor Works Programme, LCSD was the lead department in implementing minor works for leisure, cultural, sports, soft landscaping and recreation type of facilities and HAD was the lead department for projects such as walkway covers and rain shelters. For projects with high technical complexity and/or more design elements, HAD or LCSD would assign a term consultant who had the expertise to provide a greater variety of designs, as opposed to design work conducted in-house by the Works Section of HAD; and
- upon endorsement of the project by the relevant DC, the lead department would seek funding approval from the officer exercising delegated authority before assigning the project to the term consultant.

63. In reply to the Committee's enquiry regarding the selection criteria, appointment and performance monitoring of a term consultant (paragraph 3.22 of the Audit Report refers), **Director of Home Affairs** replied at the public hearings and supplemented in her letter dated 15 June 2018 (*Appendix 8*) that:

- the process of selection and appointment of term consultant involved the following procedures:
  - (a) invitation for expression of interest from the list of architectural consultants managed under the Development Bureau's purview;
  - (b) short-listing of interested consultants based on their submissions in response to the invitation for expression of interest and

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performance records of the consultants maintained by the Development Bureau;

- (c) invitation of short-listed consultants to submit Technical and Fee proposals; and
  - (d) award of the consultancy contract to the consultant with the highest overall score based on the Technical and Fee proposals. In the course of assessing Technical proposals, the performance records of the consultants maintained by the Development Bureau would be taken into account; and
- the process of performance monitoring of the term consultant involved the following procedures:
- (a) regular management of the consultant by project managers, overseen by a senior architect and a chief engineer in the Works Section of HAD via written exchanges, meetings and interviews as appropriate; and
  - (b) the execution of a three-tier system in performance monitoring which included: (i) monthly progress meeting chaired by the senior architect; (ii) quarterly project review meeting chaired by the chief engineer; and (iii) quarterly Consultant Review Committee meeting chaired by an Assistant Director. The performance of the term consultant would be rated and submitted quarterly to the Consultants' Performance Information System of the Development Bureau which was an online system available to government departments intending to engage consultants in the lists under the purview of the Development Bureau.

64. Given the technical complexity involved at restored landfills which were different from an ordinary site, the Committee queried the justifications for adopting a term contract for the Pet Garden project and asked whether technical advice was sought from EPD before appointing Consultant A.

65. **Director of Home Affairs** replied at the public hearings and supplemented in her letter dated 15 June 2018 (*Appendix 8*) that Consultant A was appointed by HAD in February 2007 as one of the pilot term consultants to carry out District Minor Works Projects in Sai Kung District that commenced in the period from

27 February 2007 to 26 February 2008. Accordingly, Consultant A was assigned to implement relevant projects under the term consultancy approach during the period, including the Pet Garden project which was endorsed by Sai Kung DC in June 2007. EPD had no role to play in the appointment of term consultant and the assignment of projects to term consultant.

66. The Committee sought details on the term contract for Consultant A, in particular, the calculation of consultancy fee for the Pet Garden project and monitoring of project cost by the consultant.

67. **Director of Home Affairs** replied at the public hearings and supplemented in her letter dated 15 June 2018 (*Appendix 8*) that:

- the consultancy fee for Consultant A was calculated based on the actual construction cost of the project multiplied by the proposed percentage fee submitted in the awarded tender by the consultant. For the Pet Garden project, the construction cost was \$22.7 million and the percentage fee was 6.8%. The consultancy fee was about \$1.54 million;
- project cost was affected by the project scope (i.e. items of works to be included in the project) and the prevailing price of the works involved. There was an established mechanism to control the project scope and ensure a competitive pricing for works through open selection of contractor:
  - (a) in the case of Pet Garden project, the project scope was vetted by the lead department and endorsed by Sai Kung DC. HAD as the project manager overseeing the term consultant, provided professional advice to LCSD in vetting the project scope. Any additional works after the award of contract had to be endorsed by DC and approved by the relevant authority in the Government. HAD also gave professional advice to LCSD on any proposed additional works during the construction stage. In short, Consultant A could not vary the project scope or instruct the contractor to carry out additional works without the prior approval of DC, the lead department and the relevant authority in the Government; and

- (b) an open tender exercise was conducted for the works contract to ensure a fair, open and competitive selection process. The lowest returned tender was accepted. The construction cost was therefore determined by the price in the returned tender for the works contract; and
- HAD could assign projects to Consultant A upon request by the lead departments during the one-year term but Consultant A was required to see through the project to completion which might span over one year, as in the case of the Pet Garden project. There was no limit to the number of projects to be assigned to Consultant A. At the time of inviting proposals for the term consultancy, there was no estimate on the number of projects to be included in the consultancy.

68. The Committee noted from paragraphs 3.26 and 3.27 of the Audit Report that it was a standard practice for consultants to carry out topographical surveys before conducting works design. EPD reminded Consultant A to conduct an updated survey to ascertain actual site conditions for carrying out design and works. Consultant A commenced the design work of the Pet Garden based on EPD's records and only conducted a topographical survey afterwards in April 2009, and discovered a site level difference of 0.7 metre at one of the surveyed points. In this regard, the Committee enquired about:

- average cost and time required for conducting a topographical survey;
- any guidelines on the number and location of survey points in a topographical survey;
- reasons for not taking on board EPD's reminder to conduct a topographical survey before works began and allowing Consultant A to deviate from the above standard practice; and
- whether HAD has sought advice from EPD on remedy or mitigation measures on the considerable site level difference.

69. **Director of Home Affairs** replied at the public hearings and supplemented in her letter dated 15 June 2018 (*Appendix 8*) that:

- the cost of topographical surveys varied according to the size, topography, accessibility, etc. of the site. The current cost for

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topographical surveys of District Minor Works Projects was generally below \$100,000. Normally, it took several weeks including field work and preparation of reports;

- there were no standard guidelines on the number and location of survey points but the topographical survey should cover adequately the existing ground levels and features within the site;
- HAD could not trace any record of EPD reminding Consultant A of the need to conduct an updated topographical survey in 2007. Nevertheless, it was HAD's standard practice to conduct a topographical survey for all sitting-out area projects (including the Pet Garden project) after funding approval. This standard practice was followed in the case of the Pet Garden project. The conceptual design in the feasibility report, which was a desktop study, was based on the records from EPD. Once the funding for the project was approved in April 2009, Consultant A engaged a land surveyor to carry out the topographical survey in the same month to verify the viability of the conceptual design;
- in the case of the Pet Garden project, even if topographical survey was conducted earlier than April 2009, it would not have obviated the need to revise design during the construction stage, because further settlement had taken place during the design stage and tendering stage, as revealed by the topographical survey conducted by Contractor C between January to March 2011;
- based on the site levels obtained in April 2009, Consultant A tackled the issue of site level differences by revising the design. HAD could not trace from records about communication with EPD on site settlement after the topographical survey; and
- in August 2009, Consultant A, HAD and EPD conducted a joint site visit for clarification of various site issues. Discrepancies of the existing drainage system were clarified and updated drainage drawings were provided to HAD by EPD.

70. According to paragraph 3.27(e) of the Audit Report, topographical survey results in March 2011 showed a significant difference in site levels of 1.59 metres compared to the records in 2009. The Committee enquired about:

- details of topographical survey(s) conducted by Consultant A;
- whether HAD or Consultant A had continuously monitored the ground settlement between April 2009 and March 2011 knowing that the site was susceptible to ground settlement problems; and
- measures taken by HAD in response to ground settlement problem and delay in project completion.

71. **Director of Home Affairs** replied at the public hearings and supplemented in her letter dated 15 June 2018 (*Appendix 8*) that:

- apart from a survey in April 2009 undertaken by Consultant A, a requirement was included in the works contract for Contractor C to carry out a topographical survey to verify the site levels before construction. Contractor C conducted the survey in March 2011. The comparison of records provided by EPD in 2007 and the surveys by Consultant A and Contractor C was in *Appendix 8*; and
- the inclusion of the additional requirement for topographical survey in the works contract was one of the measures taken in response to the special condition of the project site being a restored landfill site. In anticipation of the delay in project completion, HAD had issued warning letters to Consultant A and urged the latter to expedite the revision of design and to supervise the project progress with due diligence.

72. Referring to paragraphs 3.26(b) and 3.27(e) of the Audit Report, the Committee asked whether the unusual ground settlement problem was identified from the topographical surveys conducted by EPD on the site between 2007 and 2011, and whether HAD had informed EPD about the site level differences of 0.7 metre and 1.59 metres being recorded by Consultant A and Contractor C in April 2009 and March 2011 respectively.

73. **Director of Environmental Protection** replied at the public hearings and supplemented in his letter dated 11 June 2018 (*Appendix 7*) that:

- according to the Tseung Kwan O Landfills restoration contract, the contractor had installed about 40 settlement markers at the Tseung Kwan O Stage I Landfill at a maximum spacing of 100 metres,

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such that the settlement monitoring would cover the entire restored landfill. The contractor had been carrying out settlement monitoring at a frequency of not less than twice a year, and had been recording the settlement readings for each marker. There were three settlement markers in the vicinity of the Pet Garden (i.e. SM3, SM6, and SM9 as depicted in the following diagram). From 2007 to 2011, the records of these settlement markers were tabulated as follow:



Year	Metres above Principal Datum for settlement markers		
	SM3 (Outside Pet Garden)	SM6 (Inside Pet Garden)	SM9 (Outside Pet Garden)
Late 2007	20.886	27.582	17.002
Late 2008	20.885	27.573	17.000
Late 2009	20.876	27.564	16.997
Late 2010	20.864	27.553	16.987
Late 2011	20.850	27.542	16.977
Settlement (metres)	0.036 (i.e. 36 millimetres ("mm"))	0.04 (i.e. 40 mm)	0.025 (i.e. 25 mm)
Average settlement rate (metres/year)	0.009 (i.e. 9 mm/year)	0.01 (i.e. 10 mm/year)	0.00625 (i.e. 6.25 mm/year)

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- according to the records above and EPD's on-site observations, EPD had not noticed any unusual settlement in the Pet Garden vicinity and the rest of the Tseung Kwan O Stage I Landfill during the restoration and aftercare period. EPD did not receive the topographical survey records from Consultant A, Contractor C, or the relevant departments that were conducted during the aforementioned period.

74. With reference to paragraphs 3.33(b) and 3.35 of the Audit Report, the Committee enquired about measures taken by HAD/LCSD to minimize changes in users' requirements and steps taken and discussion details between HAD/LCSD and Sai Kung DC in this respect.

75. **Director of Home Affairs** replied at the public hearings and supplemented in her letter dated 15 June 2018 (*Appendix 8*) that:

- HAD required the consultant to obtain comments from the lead department and other relevant departments to ensure all user requirements were captured at each stage and fully incorporated in the tender documents, such that late changes were contained as far as possible. Any proposed additional works would be vetted by HAD and endorsed by the relevant DC and the lead department;
- the main reason for the additional works requested by Sai Kung DC was to suit future operational needs. In the beginning, it was proposed that the Pet Garden would be opened from 07:00 hours to 18:00 hours or 19:00 hours only. Currently, it was opened until 21:00 with lighting provided until 21:30; and
- discussion details, including dates of meetings and discussion summary, between LCSD/HAD and Sai Kung DC on providing lighting at the Pet Garden were as below:

May 2008	Having considered the potential problem of light pollution and the views of nearby residents, members of the District Facilities Management Committee under Sai Kung DC agreed that the facilities should be opened during day time only. Apart from the emergency lighting at the entrance, there would not be any lighting facility.
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April 2012	Members of the District Facilities Management Committee of Sai Kung DC endorsed the following arrangement: from September every year to April of the next year, the Pet Garden would be opened from 07:00 hours to 18:00 hours; whereas from May to August every year, the opening hours would be from 07:00 hours to 19:00 hours. Nevertheless, the District Facilities Management Committee suggested that LCSD should review the usage pattern of the Pet Garden three months after its opening and look into the feasibility of extending the opening hours of the Garden to night time having regard to general users' comments.
October 2012	The District Works Working Group of the District Facilities Management Committee under Sai Kung DC discussed and endorsed the revised project estimate of \$21 million. Amongst the additional facilities, there was provision for installation of underground cabling. The provision was to cater for the need for lighting at the sitting-out area if it were to be opened at night in future.

76. **Director of Leisure and Cultural Services** supplemented in her letter dated 19 June 2018 (*Appendix 9*) that LCSD normally conveyed all the works requirements to the works agent (i.e. HAD's Works Section) before the tendering exercise for inclusion in the tender documents so as to avoid changes of works requirements after the award of contract. Should any works modifications arise from the actual site conditions and/or unforeseeable circumstances after the estimated expenditure of the project had been approved, LCSD would first review the project scope with the works agent to contain the expenditure as far as possible. Where there was no other alternative, LCSD would report the details to the relevant DC and sought its consent for additional funding. Approval would then be sought from an officer with delegated authority in accordance with the applicable authorized expenditure limit.

77. The Committee asked about the necessity to employ quantity surveyor in estimating cost components in future.

78. **Director of Home Affairs** replied at the public hearings and supplemented in her letter dated 15 June 2018 (*Appendix 8*) that since April 2008, HAD had engaged an independent quantity surveyor for all term consultancy agreements to

provide comprehensive advice on cost items and control, including the updating of the latest project cost estimates at each work stage, working out the pre-tender estimates and post-contract valuations in the case of variation of works order during the construction stage.

79. According to paragraph 3.36 of the Audit Report, LCSD identified technical difficulties in handling the project and that HAD's Works Section was unable to provide expert advice and timely assistance due to limited resources. The Committee asked about the establishment of HAD's Works Section and when HAD was aware of LCSD's comments and follow-up actions in this regard.

80. **Director of Home Affairs** replied in her letter dated 15 June 2018 (*Appendix 8*) that HAD could not trace from record about communication with LCSD regarding resources issue in 2013. HAD only came to know about the comments from the Audit Report. During the development of the Pet Garden project from 2008 to 2013, HAD Works Section had increased the number of project managers (architects) to seven, who were overseen by a senior architect and a chief engineer to manage the projects assigned to term consultants. The number of District Minor Works Projects handled by the term consultants during the period was 354 with a total project value of some \$850 million.

81. Referring to paragraph 3.37 of the Audit Report, the Committee asked about lessons learnt and remedy to be taken to address the ground settlement problem in the development of restored landfills in future, the progress of the conduct of a review on the ground settlement of the Tseung Kwan O Stage I Landfill and whether unusual ground settlement problem had been observed at the other 12 landfills.

82. **Director of Environmental Protection** replied at the public hearings and supplemented in his letter dated 11 June 2018 (*Appendix 7*) that according to the Tseung Kwan O Stage I Landfill contractor's settlement monitoring data and EPD's on-site observations, there was no unusual settlement found at the site. EPD would consider conducting a review on the ground settlement at the Tseung Kwan O Stage I Landfill when a new afteruse project was to be implemented at this site for reference by the project proponent when planning and designing the project. For the rest of the 12 restored landfills, EPD had not observed any unusual settlement and would take immediate follow-up actions should there be any unusual settlement. With the successive completion of various afteruse facilities at restored landfills, EPD would share the experience and key points of afteruse development (e.g. differential

settlement at the site area, maximum allowable loading, etc.) with relevant B/Ds and NGOs to facilitate their future afteruse developments.

83. **Director of Home Affairs** replied at the public hearings and supplemented in her letter dated 15 June 2018 (*Appendix 8*) that for future works projects involving restored landfills or sites susceptible to ground settlement, HAD would seek expert advice from EPD in the course of implementing the projects, just as in the case of the Pet Garden project. Where time and resources permitted, HAD would recommend consultants to ascertain up-to-date site conditions for design work before tendering (particularly in situations where ground settlement had already been observed in a topographical survey carried out by a consultant at an early stage and where the design stage took a longer duration).

84. Given the complexity of works involved, the Committee asked if HAD had the relevant expertise and experience to assume the role of works agent in developing the Pet Garden project in restored landfills, and the appropriateness of including the project under District Minor Works Programme from project management perspective.

85. **Director of Home Affairs** replied at the public hearings and supplemented in her letter dated 15 June 2018 (*Appendix 8*) that in general, HAD was capable of conducting minor works costing not more than \$30 million. As works agent, HAD had also developed a number of pet garden projects under the District Minor Works Programme in various districts since 2008. Drawing from the experiences of the Pet Garden project, HAD noted that carrying out works project in a restored landfill site required special attention, as the site might be susceptible to settlement and there were other issues such as different utilities below the ground surface. While HAD had already sought expert advice from EPD in the course of implementing the project, HAD considered that the extent of settlement at the project site during the design and tender stage was unusual and should have posed challenges to any works agent.

#### Jordan Valley Park

86. The Committee enquired about reasons for assigning Jordan Valley Park as one of the 25 projects for priority implementation in the Policy Address of 2005 and the Administration's timetable of implementing the project as at end 2005.

87. **Director of Leisure and Cultural Services** replied at the public hearings and supplemented in her letter dated 12 July 2018 (*Appendix 13*) that the decision was made after having reviewed the ex-Municipal Council projects and the distribution of leisure and cultural facilities, the needs of various districts due to increasing population, views of DCs, and keen demand for open space in the densely populated Kwun Tong District. Based on the initial estimate as at end 2005, the Administration anticipated that the related works would commence in 2008 for completion in 2010.

88. Referring to paragraph 3.46(a) (excluding item (iii)) of the Audit Report, the Committee sought the reasons and necessity for the additional works, why the items were not incorporated into the tender documents and whether the additional works could be avoidable if adequate time and planning had been allowed before awarding the contract.

89. **Director of Architectural Services** replied at the public hearings and supplemented in her letter dated 16 July 2018 (*Appendix 14*) that:

- the project, as one for priority implementation, was implemented in a very tight timeframe and a fast track programme was adopted to meet the need of the local community. The consultants had to carry out many design development/coordination activities and tender documentation in parallel. The consultant's design with Independent Checker's checking was completed just before the issue of tender. To enable early completion of the project for public enjoyment, it was then decided to proceed with the tendering exercise before EPD provided their comments. ArchSD expected EPD's comments, if any, would not instigate substantial change to the design because the design had been checked by Independent Checker. If necessary, EPD's comments could be incorporated by variation orders under the contract. As such, the additional works mentioned in paragraph 3.46(a)(i) of the Audit Report regarding revisiting the design of buildings and fence wall footings locating above the capping layer, leachate system, landfill gas system and sub-soil drain system to resolve building location issue had not been included in the tender document with the assumption that they could be resolved after contract commencement;
- the necessity for additional works mentioned in paragraph 3.46(a)(ii) and (iv) of the Audit Report (i.e. variation works for compliance with statutory requirements and requirements and comments on provision of

utilities from other government departments and additional measures to monitor the extent of ground settlement at the landfill and related works) emerged after the contract had commenced. The former item was required to suit latest requirements given by statutory bodies and utilities departments while the latter was required to comply with EPD's requirements given at construction stage; and

- if sufficient time had been allowed for completion of all the design development, Independent Checker's checking and obtaining EPD's comments for incorporation into tender document before tender, the amount of the variation works might be reduced. However, the expenditure would have been incurred irrespective of whether the works were included in the tender or as a variation subsequent to the award of the contract.

90. At the request of the Committee, **Director of Architectural Services** provided diagrams illustrating new design of buildings and fence wall footings locating above the capping layer, leachate system, landfill gas system and sub-soil drain system of the landfill in *Appendix 14*.

91. The Committee enquired about details regarding variation works of \$4.8 million requested by LCSD on the radio-controlled model car racing circuit and the necessity of the additional works (paragraph 3.46(a)(iii) of the Audit Report refers).

92. **Director of Architectural Services** replied at the public hearings and supplemented in her letter dated 16 July 2018 (*Appendix 14*) that the variation works of \$4.8 million were considered necessary on operational grounds after site visit during the construction stage. Apart from other revisions and additional works, the design of the radio-controlled model car circuit was revised by:

- adding high traction fine asphalt floor for radio-controlled model car circuit and adding compact flexible surfacing works including road hump and marking paint at indoor radio-controlled model car circuit covered pit area;
- adding noise barrier for the driver's stand;
- adding Plexiglas wall at radio-controlled model car circuit;

- adding working benches and seats for covered pit area; and
- some minor variation works for the radio-controlled model car circuit.

**Director of Architectural Services** provided the layout plan showing the variation works in *Appendix 14*.

93. The Committee noted from paragraph 3.45 of the Audit Report that three consultants were appointed for the project, but there were still project cost overrun and delay problems. In this regard, the Committee enquired about the role of the three consultants in avoiding cost overrun and delays.

94. **Director of Architectural Services** replied at the public hearings and supplemented in her letter dated 16 July 2018 (*Appendix 14*) that:

- the three consultants appointed by ArchSD for the project were responsible for different duties: a lead consultant for design and construction supervision; a quantity surveyor for preparation of tender documents and valuing the cost of works; and a specialist Independent Checker for reviewing the design and layout plans and, in view of the special nature of this project, checking compliance with EPD's technical specification for carrying out works in restored landfills;
- the project was very unique and was the first project constructed on a landfill site implemented by ArchSD; and
- the contract was originally scheduled for completion in September 2009. Extension of 185 days were issued due to inclement weather and extension of two days were issued due to truck drivers on strike. Hence, the contract was completed in March 2010, against the completion date of December 2009 stated in the paper submitted to the Public Works Subcommittee of LegCo.

95. According to paragraph 3.50 of the Audit Report, EPD requested ArchSD to provide the detailed design and layout plans of the project for its comments when available. ArchSD only consulted EPD after issuing tender. Although building location issue was identified before the award of contract, ArchSD had not revised tender requirements but instead decided to resolve the issue by variation orders. The Committee enquired about:

- reasons for not providing detailed design and layout for EPD's comments;
- justifications for the decision of resolving the building location issue by variation orders;
- reasons for not informing the Central Tender Board ("CTB") of the change in design as set out in tender documents and whether ArchSD had consulted the Financial Services and the Treasury Bureau ("FSTB") or other B/Ds before deciding not to inform CTB;
- given the additional variation works of \$23.8 million (paragraph 3.46(a) of the Audit Report refers), whether ArchSD considered the practice equitable to all tenderers. In this connection, whether Contractor D's bid was the lowest bid among the proposals and the price of the second lowest bid; and
- details of the settlement claims of \$16.5 million, including the nature of the disputes, negotiation between ArchSD and Contractor D and the settlement agreement (paragraph 3.46(b) of the Audit Report refers).

96. **Director of Architectural Services** replied at the public hearings and supplemented in her letter dated 16 July 2018 (*Appendix 14*) that:

- during the feasibility study stage, ArchSD had incorporated EPD's requirements into the Technical Feasibility Statement. During the design process, ArchSD and its consultant had closely liaised with EPD for the design, ground investigation, requirements of landfill gas hazard assessments, necessary modification works of the aftercare facilities etc. Due to tight project time frame, submissions of the layout plans and detailed design to EPD took place after the issue of tender;
- it was decided not to revise the tender requirements for re-tendering and not to postpone the award of the contract after taking into account the following considerations:
  - (a) to avoid delaying the project programme;
  - (b) the Government would suffer a greater loss if the project were to be re-tendered in view of the rising trend of construction costs;

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- (c) for construction works contracts in general, it was expected and unavoidable to have certain site constraint matters resolved during construction and the costs absorbed by contingencies; and
- (d) the anticipated variations would not be substantial;
- ArchSD considered that the conflicts of the afteruse facilities with the aftercare facilities could be resolved by design changes which would not be substantial and could be resolved by variation works at post contract stage. Of such problem with the four building blocks and the model car circuit located above the landfill gas pipes and sub-soil drain system, two of the building blocks were overcome by minor re-positioning of the buildings. Hence, ArchSD did not inform CTB of the change in design and ArchSD had not consulted FSTB or other departments before making the decision;
- there were no guidelines on what changes/issues needed to report back to CTB. According to ArchSD's record, there were no cases with ArchSD that changes/issues were reported back to CTB in the past 10 years;
- as regards the variation works, irrespective of whether incorporating them into the tender documents if sufficient time was allowed, or had to be resolved during the post contract stage by variation orders, the relevant expenditure was considered necessary and therefore applicable to all tenderers. ArchSD considered that the practice was equitable to all tenderers. Contractor D was the lowest price tenderer. The tender price of the lowest tender and the second lowest tender were \$137.70 million and \$150.22 million respectively;
- upon the issue of the draft final account by quantity surveyor consultant to Contractor D for agreement in February 2012, Contractor D disagreed with the draft final account and served a notice of arbitration in May 2012 claiming for all disagreement items in respect of site levels, prolongation costs, methods of measurement, principles of valuing variations and whether the variation items were under the Architect's Instructions. Details of the disputes were in *Appendix 14*;
- upon receiving the notice of arbitration, ArchSD sought legal advice within the Government and employed an independent quantum expert to study and analyze Contractor D's claims on individual disputed items. Legal advice considered that it would be a good deal for the



Government if protracted and expensive arbitration could be avoided by securing the contractor's agreement to settle the final account in total of \$178 million through negotiation. As the arbitration expenses would be substantial for both parties, ArchSD took the legal advice and proceeded to seek FSTB's approval in accordance with the Stores and Procurement Regulations to settle the disputes by negotiation; and

- in June 2013, FSTB's approval was obtained to negotiate with Contractor D for full and final settlement of all disputes. In July 2013, ArchSD formed a negotiation team to conduct negotiation with Contractor D to request for withdrawal of the notice of arbitration, and full and final settlement of all the disputes on a without prejudice basis. Subsequently, a lump sum settlement sum of \$16.5 million was reached by the parties. Upon further approval from FSTB, the results of the negotiation were recorded in a settlement agreement executed in August 2013.

97. In reply to the Committee's enquiry on whether the Administration had issued any circulars/guidelines on the kind of changes during project implementation that would require the responsible B/D to report to CTB and whether FSTB considered that ArchSD should inform the Board of the changes in this project, **Ms Candy NIP, Principal Assistant Secretary for Financial Services and the Treasury (Treasury)(A)** replied at the public hearings and **Secretary for Financial Services and the Treasury** supplemented in his letter dated 12 July 2018 (*Appendix 15*) that:

- as laid down in the Stores and Procurement Regulations, procuring departments were responsible for drawing up tender specifications to meet their specific procurement needs, defining the contract requirements and conducting tender exercises in a manner meeting the government procurement principle of maintaining open and fair competition. Procuring departments were also responsible for project implementation and contract management. If and when there were any changes to the contract requirements after contract award, procuring departments should execute variations to contracts according to the authority provided in the Stores and Procurement Regulations;
- upon conclusion of tender evaluation, the procuring departments should prepare a tender report containing a clear recommendation in the standard format for consideration by the relevant tender board. Apart from the usual information required, procuring departments should also

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include in the tender report any special circumstances applicable to the tender recommendation. In general, when considering whether to initiate a change to the tender requirement at the tender stage or to pursue the change at the post-tender stage through a contract variation, the procuring departments should take into account the need to maintain open and fair competition, as well as relevant operational considerations; and

- for the case in question, CTB was not informed of the need to change the design of the project in the tender report submitted by ArchSD in November 2007. FSTB noted in paragraph 3.48 of the Audit Report that ArchSD considered that the building location issue could be resolved at the post-contract stage and therefore did not inform the Board of the change in design.

98. Referring to the paper submitted to the Public Works Subcommittee of LegCo on 15 June 2007, the Committee sought the basis on how the \$11.6 million contingencies for the estimated capital cost of the project was calculated and under what conditions the contingencies would be deployed.

99. **Director of Architectural Services** replied at the public hearings and supplemented in her letter dated 16 July 2018 (*Appendix 14*) that the contingencies of \$11.6 million stated in the paper submitted to the Public Works Subcommittee was allowance of around 7.5% of the total estimated cost of works for works or expenditure which could not be foreseen at the time of preparing the paper. Generally, allowing 7.5% contingency for an open space project was appropriate at that period of time.

100. In reply to the Committee's enquiry for the reasons for ArchSD to adopt a fixed price contract for implementing the project, knowing that there might be variations and complications when developing facilities in a restored landfill, **Director of Architectural Services** replied at the public hearings and supplemented in her letter dated 16 July 2018 (*Appendix 14*) that generally, lump sum fixed price contract (instead of re-measurement contract) was adopted for implementing projects in which the client's requirements could be established at early stage and the detailed design information and drawings were available for estimation and preparation of tender documentation, which was the case of the Jordan Valley Park.

**D. Monitoring of non-governmental bodies' afteruse facilities at restored landfills**

101. Referring to Table 5 in paragraph 4.3 of the Audit Report regarding land licences granted by EPD, the Committee sought the similarities and differences between licences granted by EPD and projects approved under the Funding Scheme, such as invitation for applications, consideration and approval of applications, assistance provided to successful applicants and monitoring of compliances.

102. **Director of Environmental Protection** provided relevant information in his letter dated 12 July 2018 (*Appendix 16*) as follows:

*Modes of inviting applications*

- for land licences granted by EPD, four licensees (except Licensee C) were National Sports Associations who obtained prior policy support from HAB before formally submitting applications to EPD. For Licensee C, after consulting relevant B/Ds, EPD granted the land licence under the delegated authority of LandsD;
- projects under the Funding Scheme were open for all eligible organizations to apply within specified period;

*Process of considering and approving applications*

- EPD would grant land licence to the applicant if supported by relevant B/Ds and there being no other applications received;
- for projects under the Funding Scheme, EPD had established a Steering Committee to assist in assessing the applications based on established assessment criteria. Subject to the satisfaction of the Steering Committee with the detailed proposals, the Steering Committee would recommend Secretary for the Environment to grant an approval-in-principle to the selected organizations to take forward the projects. The selected organizations would then carry out the design and planning of the projects, and prepare the detailed cost estimates of the works. EPD would follow the Government's established procedures including seeking the necessary funding approval from FC of LegCo after consulting relevant DCs;

*Assistance provided to successful applicants*

- for land licences, the afteruse facilities were to be developed by the applicants on a self-financing basis. EPD and the relevant B/Ds would provide the licensees technical information and advice to allow the licensee to fully address the conditions of the restored landfill during the design stage and complete its design and construction of the suitable facilities at the restored landfills as soon as possible;
- under the Funding Scheme, funding support would be provided in respect of (a) a capital grant subject to a cap of \$100 million (in money-of-the-day prices) per project to cover the cost of capital works and related matters; and (b) a time-limited grant subject to a cap of \$5 million (in money-of-the-day prices) per project to meet the starting costs and operating deficits (if any) for a maximum of the first two years of operation. EPD would also provide other assistance such as consultation with the stakeholders, liaising with relevant government departments to obtain professional advice and preparing the necessary information for funding application etc.;

*Monitoring of licensees*

- in accordance with the land licence conditions, EPD would request the applicant to submit detailed construction plans and programmes; and carry out inspections and monitor the construction progress and operation of the afteruse facilities; and
- the selected organizations were required to submit progress reports and audited financial statements to EPD regularly. EPD and relevant government departments would also conduct site visits and inspections from time to time to ensure that the development and operation of the approved projects complied with the terms and conditions of the land licences approved under the Funding Scheme.

103. Referring to paragraphs 4.25 to 4.30 of the Audit Report, the Committee enquired about the justifications for implementing the Funding Scheme in three batches, timetable for implementing the projects under Batches 1 to 3 as listed in Table 7 in paragraph 4.25, and sought explanations for the delays as depicted in Table 8 in paragraph 4.26.

104. **Director of Environmental Protection** replied at the public hearings and supplemented in his letter dated 25 May 2018 (*Appendix 6*) that:

- at the time the Funding Scheme was launched, six restored landfills had already been developed into various types of recreational facilities or planned for designated uses for most of the usable areas. For the remaining seven restored landfills, the Government set up the Funding Scheme for non-profit-making organizations and National Sports Associations to develop recreational facilities or other innovative proposals at these restored landfills;<sup>12</sup>
- the Steering Committee on the Funding Scheme considered that the seven restored landfills under the Scheme should be launched in batches so that the operating details of the Funding Scheme could be refined after taking account of the experience from the first batch. Subsequent to the site visits to the restored landfills and having considered various factors such as location of the restored landfills, the Steering Committee agreed grouping the seven restored landfills into three batches as depicted in Table 7 in paragraph 4.25 of the Audit Report;
- EPD would commence the review of Batch 1 of the Funding Scheme, with the outcome of the review and the proposed refinements expected to be provided to the Steering Committee for consideration in 2019. EPD would then develop the refinement details and relevant application information and arrangement for Batch 2 of the Funding Scheme. Following the completion of the assessment of Batch 2 applications, implementation of Batch 3 of the Funding Scheme would commence. EPD would expedite the commencement and implementation of Batches 2 and 3 of the Funding Scheme;
- there were delays of one month, seven months and seven to nine months respectively in seeking FC's funding approval, invitation of preliminary proposals and the conduct of briefings and site visits for interested parties due to the following reasons:
  - (a) revisions in the operation details and arrangement of the Funding Scheme based on the suggestions from the Steering Committee;

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<sup>12</sup> See Table 1 in paragraph 1.11 of the Audit Report regarding details of the six landfills which had been developed with recreational facilities and seven landfills included under the Funding Scheme.

- (b) the conduct of site surveys for each restored landfill for collecting the latest site information;
  - (c) preparation of more detailed documentation to facilitate applicants to take due consideration of the site characteristics, details and development constraints of PPVL and the assessment requirements; and
  - (d) consultation with Tuen Mun DC on the preferred afteruses of the PPVL; and
- there were delays of 18 to 28 months in conducting vetting and assessment by the Steering Committee because of the following reasons:
- (a) taking note of the considerable constraints and technical difficulties in developing afteruse projects in restored landfills, EPD had allowed a longer period for the applicants to prepare and submit their applications, which was closed on 29 April 2016;
  - (b) technical details provided in the applications received were in general not sufficient. EPD invited all applicants to provide supplementary information on the engineering and environmental feasibility of their proposed projects. The supplementary information received was provided to relevant B/Ds for further comment; and
  - (c) EPD consulted Tuen Mun DC on the proposed uses received for PPVL to enhance district consultation.

105. The Committee asked for details regarding applications received in Batch 1 of the Funding Scheme.

106. **Director of Environmental Protection** provided relevant information in his letters dated 25 May 2018 (*Appendix 6*) and 12 July 2018 (*Appendix 16*) as follows:

- for Batch 1 of the Funding Scheme, EPD received a total of 27 applications, including seven applications each for the Ma Yau Tong Central Landfill and PPVL, and 13 applications for the

Tseung Kwan O Stage I Landfill. Since applications received on PPVL in general failed to address the various site constraints in their proposals, the Steering Committee did not recommend the Government to accept any application. EPD would review the development constraints of PPVL and consider how best to address the issues concerned to facilitate the future afteruses of PPVL;

- an approval-in-principle was granted to an applicant in February 2018 on the proposal to develop a camp site-cum-green education ground at the Tseung Kwan O Stage I Landfill, and the applicant was now preparing the Technical Feasibility Statement for the proposed project. Upon the approval from the relevant bureau, pre-construction activities would be carried out (including site investigation and survey, landfill gas hazard assessment, detailed design, drafting of tender documents etc.) with a view to seeking funding approval from FC of LegCo in 2019-2020; and
- another applicant was preparing the detailed revitalization proposal for the Ma Yau Tong Central Landfill with a view to obtaining the approval-in-principle the soonest possible.

107. The Committee enquired in what ways EPD had drawn experience from processing Batch 1 applications and the management and operation of existing afteruse facilities in developing other restored landfills in future under the Funding Scheme.

108. **Director of Environmental Protection** replied at the public hearings and supplemented in his letters dated 25 May 2018 (*Appendix 6*) and 12 July 2018 (*Appendix 16*) that:

- during implementation of the Funding Scheme, it was considered necessary to introduce various refinements to the operation arrangement. The main refinements included:
  - (a) more detailed documentation (including a detailed application form, a guide to applications, a technical information kit for each restored landfill and a dedicated website for the Funding Scheme etc.) to facilitate the applicants to take due consideration of the site characteristics and constraints as well as the assessment

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requirements, so that the applicants were well informed to prepare their submissions;

- (b) interviews with shortlisted applicants such that the Steering Committee might seek direct clarifications from applicants, and selected applicants were able to enhance their proposals based on the suggestions received during the assessment process; and
  - (c) enhanced engagement with relevant DCs at an early stage of the Funding Scheme such that views of the local community could be considered in the assessment process in a timely manner. EPD and the Steering Committee consulted the DCs concerned in September 2015 prior to the launching of Funding Scheme, and in January 2017 after receiving the applications;
- EPD in conjunction with the Steering Committee would review the operation arrangement and the experience gained from processing Batch 1 applications, including the flow of conducting various steps, the arrangement of DC consultation etc. so as to enhance the overall progress and operation of the Funding Scheme; and
  - EPD had made reference to relevant overseas experience during the consideration of afteruses of restored landfills.

109. The Committee enquired whether Licensees A to E in Table 5 in paragraph 4.3 of the Audit Report could apply for the Funding Scheme to further enhance and develop their facilities.

110. **Director of Environmental Protection** replied at the public hearings and supplemented in his letter dated 12 July 2018 (*Appendix 16*) that the purpose of the Funding Scheme was to provide funding support for non-profit-making organizations and National Sports Associations to develop recreational facilities or other innovative proposals at the seven restored landfills which did not have development plan yet. The grant provided under the Funding Scheme was not applicable to the projects or facilities shown in Table 5 of the Audit Report. If the licensees in Table 5 were interested in applying the grant under the Funding Scheme, EPD would need to terminate their land licences earlier and include such restored landfills into the Funding Scheme for open applications. EPD would then consider all applications in accordance with the assessment procedures of the Funding Scheme, and there was



no guarantee that the applications submitted by the licensees in Table 5 would be selected.

111. The Committee sought details on how the Steering Committee vetted the proposals received and the types of assistance offered, if any, to speed up the development of feasible and approved proposals.

112. **Director of Environmental Protection** replied at the public hearings and supplemented in his letter dated 12 July 2018 (*Appendix 16*) that the assessment procedures, criteria and requirements etc. were set out in the "Guide to Application" prepared for the Funding Scheme and were made available to all applicants for reference so that they could understand the details, eligibility and assessment requirements etc. of the Funding Scheme. Apart from providing funding support to the selected organizations, EPD would also provide other assistance for applicants to take forward their projects. A copy of "Guide to Application" is provided in *Appendix 16*.

113. The Committee enquired about the differences between temporary or permanent facilities as shown in Table 5 in paragraph 4.3 of the Audit Report in terms of conditions and duration and reasons for some facilities having operated for 15 years (the temporary golf driving range) while some had operated for two years (the temporary shooting range).

114. **Director of Environmental Protection** replied at the public hearings and supplemented in his letter dated 12 July 2018 (*Appendix 16*) that:

- in case the restored landfills would be developed for long-term uses (such as recreation parks or sitting-out areas) while the detailed construction programme was yet to be finalized, EPD would try to use the lands for suitable temporary beneficial purposes on condition that the applicant had obtained policy support from the relevant bureaux. In general, if there was already an imminent development plan, the land licences would be granted for a shorter period (about less than three years) and there would also be a condition for early termination of the land licence (usually with an "advance notice" period of six to nine months). For the land licences in Table 5 of the Audit Report, the development plans of the corresponding restored landfills were as follows:

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Afteruse facilities	Licence period	Long-term development plan of the restored landfills
Temporary cricket grounds	three years	Kwai Chung Park
Temporary shooting range	two years	Included in Batch 1 of the Funding Scheme
Temporary golf driving range	two years	Golf course (Non-in-situ land exchange)

- for the BMX Park and football training centre, having considered that the proposed recreational uses would not affect the long-term development plan of the respective restored landfill, and with the policy support from the relevant bureau, their land licences were granted with a longer licensing period. These included: (a) the 21-year licence issued to Licensee D in 2008 for the development of BMX Park at the restored Gin Drinkers Bay Landfill; and (b) the 10-year licence issued to Licensee B in 2016 for the development of football training centre at the restored Tseung Kwan O Stage I Landfill; and
- land licence for the temporary golf driving range at the restored Shuen Wan Landfill was first granted in 2003 was renewed subsequently for seven times, with extended periods ranging from one to three years. Hence, the licensing periods of the temporary golf driving range (with licence periods of one to three years) and the temporary shooting range (with licensing period of two years) were of similar time duration.

115. The Committee sought the reasons for renewing the temporary licence of Licensee C seven times for a consecutive period of 15 years without identifying a permanent usage of the site within the period.

116. **Director of Environmental Protection** replied at the public hearings and supplemented in his letter dated 12 July 2018 (*Appendix 16*) that:

- a land licence was granted by EPD to Licensee C on the operation of a temporary golf driving range in the Shuen Wan Landfill in 2003. EPD, after consulting relevant B/Ds, carried out an open Expression of Interest exercise in 2009 to invite all interested parties to submit

proposal on developing a 9-hole golf course. Taking into account the time required for the applicant to carry out detailed design and associated environmental impact assessment process, the land licence was extended accordingly;

- the Government announced in the Policy Address 2017 that the Chief Executive-in-Council had given in-principle agreement to the pursuit of a proposal for the contemporaneous surrender of private land with high ecological importance in Sha Lo Tung to the Government and granting of a piece of land at the Shuen Wan Landfill to the Sha Lo Tung Development Company Limited (the non-in-situ land exchange). EPD had also extended the land licence of the temporary golf driving range to tie in with the latest developments; and
- in view of the uncertainty of the development plan and timetable for the land disposal arrangement of the Shuen Wan Landfill, it would be difficult for other organizations/companies to invest in the temporary use of the land. Licensee C had already invested in the infrastructure for the driving range and EPD was satisfied with its operation and financial position. EPD hence considered it more appropriate and cost-effective to extend the licence for Licensee C, while discussion on long term development continued.

117. The Committee enquired about reasons for the delays in completing the afteruse facilities as depicted in Table 6 in paragraph 4.5 of the Audit Report and whether the target completion dates were over optimistic.

118. **Director of Environmental Protection** replied at the public hearings and supplemented in his letter dated 12 July 2018 (*Appendix 16*) that:

- the delays in the completion of temporary cricket grounds and football training centre were mainly due to the need for Licensee A and Licensee B to connect the necessary power and water supply for the facilities, and the more-than-expected time required to provide submissions for meeting the statutory requirements and to obtain the respective approvals. In addition, with a view to providing the public and its members with a more suitable environment for practicing, Licensee A informed EPD during construction (i.e. May 2017) that there was a need to carry out ground levelling works at the licensed area. To this end, in accordance with the land licence conditions,

Licensee A submitted further relevant information to EPD and its restoration contractor for advice and approval. In the end, the Licensee A took another six months to complete such additional works;

- to tie in with the construction progress of the football training centre, EPD had been liaising with HAB, Licensee B and its consultants, and giving advice to resolve design/technical problems. Due to the development constraints of restored landfills, the consultants of the football training centre had to spend more time to obtain approvals from the relevant authorities (such as the Buildings Department and Geotechnical Engineering Office) for the design submissions; and
- EPD would enhance future communication with the relevant organizations and share with them the development experience before drafting or issuing land licences. This would assist the licensees to understand the time required and potential challenges during design and construction of afteruse facilities at restored landfills, and avoid as far as practicable significant difference in the time gap between the actual completion date and target completion date as set out in the land licence.

**Director of Environmental Protection** subsequently informed the Committee in his letter dated 4 October 2018 (*Appendix 12*) that the football training centre and temporary cricket grounds commenced their operations on 3 August and 1 September 2018 respectively.

119. According to paragraphs 4.8 and 4.9 of the Audit Report, EPD reckoned that it did not possess the relevant expertise to monitor a licensee's compliance with licence conditions. The Committee enquired whether EPD had sought assistance from LCSD or other government departments, whether the long-time closure of some facilities in the BMX park was attributable to EPD's inability to monitor contractor's performance or the licensee's financial difficulties in maintaining the facility; and whether the licensee could apply financial assistance from the Funding Scheme.

120. **Director of Environmental Protection** replied at the public hearings and supplemented in his letter dated 12 July 2018 (*Appendix 16*) that:

- the BMX Park's international racing track at the restored Gin Drinkers Bay Landfill was temporarily closed for maintenance from October 2016 to December 2017. During that period, Licensee D had

encountered difficulties in tendering and awarding the improvement and maintenance contract (for example, re-tendering was needed as qualified contractor could not be selected during the tendering process), leading to a more than expected time required for the track maintenance. The other facilities at the BMX Park remained open for public use;

- during the maintenance period, EPD sought technical advice from the relevant B/Ds (such as selection of suitable surfacing materials for the track) to assist the licensee. EPD did not find Licensee D incapable of continuing to develop and operate the facilities due to financial problem;
- to tie in with the 2009 East Asian Games, land licence of the BMX Park was awarded to Licensee D in July 2008 to design, construct and operate the BMX Park till 2029. However, the Funding Scheme was only rolled out in November 2015 to include restored landfills not yet developed for suitable facilities (excluding the licensed area of BMX Park); and
- if complying with the eligibility criteria, NGOs could also apply for the Sir David Trench Fund for Recreation or other charitable funds (such as the Hong Kong Jockey Club Charities Trust) to finance their development plans.

121. With reference to paragraphs 4.11 to 4.12 and 4.15 to 4.17 of the Audit Report, the Committee enquired about details regarding EPD's inspections, such as whether there was a checklist to facilitate monitoring by on-site staff, and the reasons of not requiring licensees to submit audited financial statements for ensuring their financial viability to maintain facility operation.

122. **Director of Environmental Protection** replied at the public hearings and supplemented in his letter dated 12 July 2018 (*Appendix 16*) that:

- the inspection form was designed mainly for the purpose of environmental monitoring and did not cover specifically items related to the land licensees' compliance with land licence conditions. Nevertheless, EPD's site staff would also inspect the overall conditions of the afteruse facilities in general and conduct inspections from time to

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time to monitor the licensees' compliance with licence conditions and to record the results in the inspection form;

- to further enhance the monitoring of the licensees' compliance with the licence conditions, EPD was reviewing and updating the current inspection form as recommended in the Audit Report. It was expected that the review would be completed by end 2018;
- EPD had required Licensee C to submit audited financial statements and EPD was satisfied with Licensee C's financial condition; and
- EPD considered that the other four licensees (i.e. Licensees A, B, D and E) had all been proactively carrying out the construction works or upkeeping their normal operation, demonstrating that they were both operationally and financially capable of running the afteruse facilities. To avoid imposing extra financial burden to the licensees by requesting them to submit audited financial statements (e.g. the licensees have to employ independent auditors to audit the financial statements), EPD did not request them to submit audited financial statements in the past. EPD would consider Audit's recommendations and request licensees to submit audited financial statements annually so as to assess in more details their ability to continually operate the afteruse facilities.

123. In reply to the Committee's enquiry on the actions taken and timeframe to take forward the Audit's recommendation in paragraph 4.19(d) of the Audit Report regarding incorporating quantitative measures in land licences, **Director of Environmental Protection** replied at the public hearings and supplemented in his letter dated 12 July 2018 (*Appendix 16*) that EPD was reviewing the land licences that were soon to be renewed, so as to explore the possibility of introducing quantitative indicators for monitoring the licensees' performance in the future. EPD would seek views from relevant B/Ds on this matter and expected that the work would be completed by the first half of 2019.

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**E. Conclusions and recommendations**

<p><b>Overall comments</b></p>
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124. The Committee:

- emphasizes that as land resources are scarce and valuable in Hong Kong and there is a pressing need for district recreational amenities facilities, the 13 restored landfills which occupy a total area of 320 hectares ("ha") (except for areas occupied by restoration facilities for aftercare work) should be put into gainful use for public enjoyment as early as practicable;
- notes that restored landfills are no ordinary pieces of land and any development of afteruse facilities in restored landfills should have taken into account the following constraints:
  - (a) landfilled waste is continuously undergoing biodegradation and generating landfill gas and leachate. It is important to stringently supervise and monitor contractors' operation of restoration facilities and their compliance with relevant statutory and contractual requirements to ensure that landfills are safe and also environmentally acceptable for afteruse; and
  - (b) development of afteruse facilities in restored landfills involves technical risk assessment and management to address the development restrictions, such as differential ground settlement. Concerted efforts and coordination from different government departments are essential for the effective implementation of afteruse development projects;
- stresses that early involvement and consultation with local communities and stakeholders, such as District Councils ("DCs") in the development of afteruse facilities in restored landfills with comprehensive and accurate information provided on all viable development options are essential to speed up the development process with a view to addressing local needs in a timely manner;

Ineffective monitoring of contractor's aftercare work

- expresses astonishment and grave concern and finds it unacceptable about the Environmental Protection Department ("EPD")'s failure in its important role to monitor Contractor A's compliances with statutory and contractual requirements in operating restoration facilities at the Pillar Point Valley Landfill ("PPVL"),<sup>13</sup> as evidenced by the following:
  - (a) despite the deployment of on-site staff to conduct regular inspections and sampling tests in monitoring contractors' works since 2004, EPD had not detected Contractor A's long period of non-compliances with statutory and contractual requirements until investigations were conducted pursuant to complaints received by EPD from January to April 2016;
  - (b) the extent of Contractor A's non-compliances with statutory and contractual requirements<sup>14</sup> were extensive, spanning over 24 months between December 2015 and November 2017;
  - (c) before June 2016, EPD had only monitored contractors' performance on their aftercare work in restored landfills with slimmer on-site staff, where assessment of contractors' performance was largely based on regular sampling results, daily

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<sup>13</sup> In 2004, EPD entered into a landfill restoration contract with Contractor A for the design and construction of restoration facilities at PPVL and the aftercare of the landfill for 30 years after the completion of the restoration facilities. Contractor A needs to comply with the statutory requirements stipulated under relevant environmental legislation (e.g. Water Pollution Control Ordinance (Cap. 358)) and contractual requirements in various major environmental parameters as stipulated in the landfill restoration contract.

<sup>14</sup> Contractor A's non-compliances with statutory and contractual requirements included:

- (a) 10 offences in May 2016 for exceeding the stipulated maximum daily discharge limit of leachate;
- (b) two offences in May 2016 for failing to notify EPD within 24 hours of incidents depicted in (a) above;
- (c) nine offences from June 2016 to July 2017 for exceeding the stipulated total nitrogen level in treated leachate discharge;
- (d) non-compliances with the contractual requirement on treatment capacity of the leachate treatment plant in 347 days from May 2016 to November 2017;
- (e) non-compliances with the contractual requirement on the total nitrogen level in treated leachate discharge in 20 days from June 2016 to August 2017; and
- (f) non-compliances with the contractual requirement on the operating temperature of landfill gas flaring plant in 28 days from December 2015 to March 2016.



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visual inspections during daytime on weekdays and manual checking of contractors' operating data; and

- (d) Contractor A was required to maintain proper site records including daily log sheets for EPD's inspection upon request. However, EPD had never initiated any checking on the daily log sheets against the contractor's aftercare monthly reports submitted to EPD to verify the accuracy of data contained in the reports. It was until mid 2016 when EPD requested Contractor A to provide daily log sheets covering 973 days from January 2013 to August 2015 for checking that EPD discovered that daily log sheets for 299 (31% of 973) days were missing and one daily log sheet was found undated;
- expresses astonishment and grave concern and finds it unacceptable about EPD's rationale for its decision to choose the terminal foul water manhole of PPVL site as the sampling point for collecting leachate discharge for testing, whereby the discharge would have been mixed with sewage from the nearby site office, rendering the sampling test results unreliable or even ineffective in monitoring Contractor A's compliance with statutory and contractual requirements on treated discharge;
  - expresses grave concern about the progress in the implementation of measures to strengthen EPD's monitoring of contractors' aftercare work in restored landfills, including the installation of advanced equipment items.<sup>15</sup> As of March 2018, the installation dates of certain advanced equipment items at PPVL and four other restored landfills were later than the target dates as set in the review conducted by EPD in 2016, and the data monitoring systems at two restored landfills (namely the Gin Drinkers Bay Landfill and the Tseung Kwan O Stage II/III Landfill) had not been upgraded;
  - urges EPD to expedite the installation of advanced equipment at PPVL and other restored landfills installed with leachate treatment plants

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<sup>15</sup> After having received complaints about Contractor A's non-compliances with statutory and contractual requirements, EPD had conducted a review in 2016 on the robustness of environmental monitoring practices at EPD's waste facilities, and implemented a number of measures including installing advanced equipment for automating the monitoring work, conducting daily and weekend surprise checks, adopting irregular inspection patterns and locating new sampling points for leachate discharge.

("LTP") with a view to automating the monitoring work and detecting cases of non-compliance in a more timely manner;

Lack of effective communication between government departments in developing afteruse facilities in restored landfills

- expresses serious dismay and finds it unacceptable about the delays and lack of effective cross-departmental coordination in the development of afteruse facilities in restored landfills in that no concerted efforts among related government departments had been made to address the technical constraints and obstacles presented in restored landfills,<sup>16</sup> resulting in project delays and cost overrun, as revealed in the cases of development of the Kwai Chung Park, Wan Po Road Pet Garden and Jordan Valley Park;

*Kwai Chung Park*

- expresses serious dismay and finds it unacceptable about the slow progress of the development of the Kwai Chung Park at the Gin Drinkers Bay Landfill as evidenced by the following:
  - (a) 17 years had elapsed since the completion of restoration facilities by EPD in September 2000, but the development of the Park was still at a preliminary planning stage as at February 2018;
  - (b) although the slow development progress was covered in the Director of Audit's Report No. 60 published in 2013 and the Leisure and Cultural Services Department ("LCSD"), the lead department for the project, agreed to devise an action plan to put the site into gainful use as soon as practicable, only the bicycle motocross ("BMX") park (3.9 ha) and the temporary cricket grounds (4.5 ha)<sup>17</sup> had been opened for public use. The remaining areas (i.e. 17.1 ha or 67% of the total site area of 25.5 ha) had not been opened for public use for over 17 years; and

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<sup>16</sup> Technical constraints and obstacles include the presence of underground restoration facilities, potential landfill gas hazards, limitation on loading capacity of the sites and differential ground settlement problem.

<sup>17</sup> Target completion date for the temporary cricket grounds as stipulated in the relevant land licence was 23 September 2016 and it was opened for public use on 1 September 2018, with a delay of nearly two years.

- (c) according to the present progress, the commissioning target of the Kwai Chung Park in or before 2022 in accordance with the five-year plan as announced in the 2017 Policy Address<sup>18</sup> might not be achievable. Since 2013, considerable time had been spent in the process of confirming the technical feasibility of the proposed project scope of a golf driving range,<sup>19</sup> and the arrangement of funding for conducting the landfill gas hazard assessment<sup>20</sup> between LCSD, the Architectural Services Department ("ArchSD") and Home Affairs Bureau ("HAB");
- is unconvinced and finds it unacceptable about LCSD's capability in spearheading the Kwai Chung Park project in that it had underestimated the technical difficulties in developing the site. Despite various site limitations identified<sup>21</sup> arising from the failure of various development proposals explored between 2001 and 2009,<sup>22</sup> LCSD had not learned any lesson when proposing the new development option of the golf driving range by ascertaining with ArchSD and EPD on its feasibility before putting it forward to Kwai Tsing DC for consideration in 2013. In addition, LCSD only sought technical advice from EPD and ArchSD on a case-by-case basis, without considering the need for establishing a standing mechanism or setting up a working group between the three departments to proactively mapping out feasible way forward in developing the site;

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<sup>18</sup> The Kwai Chung Park was included in the 2017 Policy Address as one of the projects in the five-year plan for sports and recreation facilities targeted to be launched in or before 2022.

<sup>19</sup> In 2013, LCSD proposed to a committee under the Kwai Tsing DC the project scope of the Park which included a golf driving range with 30 golf-driving bays, and the committee endorsed LCSD's proposed project scope. ArchSD informed HAB and LCSD in July 2014 that the site could not accommodate the proposed golf driving range due to site constraints.

<sup>20</sup> In January 2015, LCSD informed HAB that it was unable to arrange funding for the landfill gas hazard assessment to evaluate the potential hazards of landfill gas to the Park due to the very stringent financial position. According to LCSD, it tried to seek the required funding from HAB but in vain.

<sup>21</sup> The site constraints identified included irregular differential settlement of the site, existence of slopes leaving little usable areas, technical difficulties in slope treatment, and the entire stretch of land being covered in a capping layer and installed with restoration facilities, which posed challenges to the design of the venue and construction of superstructures.

<sup>22</sup> Various development options explored between 2001 and 2009 by LCSD included:

- (a) a football training centre;
- (b) opening part of the Park to the public;
- (c) a model car racing track;
- (d) a multi-purpose lawn; and
- (e) developing part of the Park into a leisure ground (including a cycling ground).

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- observes that the site for the temporary cricket grounds was not easily accessible and its condition was unsatisfactory, and the three-year term of the current licence is too short for the licensee to plan and invest on the cricket grounds (the current licence will expire by March 2019);

*Wan Po Road Pet Garden*

- expresses serious dismay and finds it unacceptable about the decision of the Home Affairs Department ("HAD") to appoint a consultant in January 2008 under a term consultancy to provide consultancy services for feasibility study, design, tendering, site supervision and contract administration for the Wan Po Road Pet Garden project, which involved tackling special technical issues in restored landfills, in particular ground settlement. Significant project delay and cost overrun<sup>23</sup> demonstrated that the consultant might not possess the relevant experience and expertise to supervise the project;
- expresses serious dismay and finds it unacceptable about HAD's ineffective monitoring over the consultant's work and the lack of inter-departmental coordination between HAD, EPD and LCSD in tackling the continuous ground settlement problem of the site, resulting in constant design alterations, cost overrun and delay of project implementation as revealed in the following:
  - (a) despite EPD's reminder in 2007 to conduct an updated topographical survey to ascertain site levels, the consultant only conducted the survey until April 2009 at a cost of \$9,000 and discovered a site level difference of 0.7 metre at one of the surveyed points. Revisions to the design were required which resulted in a delay of seven months in inviting tenders;
  - (b) even knowing the site level difference in (a) above and that the site would continue undergoing ground settlement problem, HAD took the problem lightly and had not instructed the consultant to continue monitoring site levels. The second topographical survey was conducted two years later by the contractor of the project from January to March 2011 and discovered a site level difference of up to 1.59 metres. Further revisions to the design was needed resulting in an additional cost of \$4.4 million in

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<sup>23</sup> There was a delay of 29 months and a cost overrun of \$12.8 million, which was 100% higher than the original approved project estimate.

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adjusting works design. The extent of design revisions during the construction stage could have been reduced if the consultant had conducted another topographical survey to ascertain the site levels before tendering the works to the contractor;

- (c) HAD had neither informed EPD of the unusual ground settlement problem discovered at the site nor sought advice from EPD on the matter;
- (d) LCSD, as the lead department of the project, conducted an internal review and found that both the consultant and contractor had difficulties in handling the project and although HAD's Works Section was expected to provide expert advice on the project, limited resources had hindered it from providing timely assistance and proper technical advice. Yet Director of Home Affairs replied in her letter to the Committee that she only came to know about LCSD's above comments from the Director of Audit's Report ("Audit Report") after project completion; and
- (e) after award of the contract for the construction of the Pet Garden, additional works items were carried out by the contractor to suit the revised works design and according to comments offered by the relevant government departments. As a result, the contractor was granted an extension of time for 4.5 months and the total cost of additional works items was \$7.6 million (accounted for over 50% of the original contract sum of \$15.1 million);

*Jordan Valley Park*

- expresses serious dismay and finds it unacceptable that ArchSD had not followed the best practices in the design and construction of the Park to include all requirements in the tender documents, leading to variation works of \$9.4 million after awarding the contract. Even though the design change was known before the award of contract, ArchSD had not informed the Central Tender Board ("CTB") of such change. Details of the deficiencies are as follows:
  - (a) EPD had requested ArchSD to provide detailed design and layout plan for its comments when the plans were available, but ArchSD only consulted EPD after inviting tenders. EPD later advised that many aspects of the design deviated from the design requirements, in particular that 4 of the 13 blocks of buildings

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were located above the landfill restoration facilities ("building location issue");

- (b) ArchSD awarded the contract and decided to resolve the building location issue at post-contract stage instead of revising tender requirements and re-tendering, and it had not informed CTB of such a decision; and
- (c) variation works arising from building location issue amounted to \$9.4 million, the cost of which might be reduced if they could be included in the original contract after EPD's comments were sought;

Ineffective liaison with DCs and relevant stakeholders on the development of afteruse facilities in restored landfills

- is unconvinced and finds it unacceptable that LCSD, who assumed the liaison role with DCs and other relevant stakeholders on the development of the Kwai Chung Park, Wan Po Road Pet Garden and Jordan Valley Park, failed to effectively communicate with DCs and relevant stakeholders on the development constraints of the restored landfills and propose viable options for their consideration in accordance with the Administration's laid down procedures, resulting in wastage of time or imposition of additional costs in project implementation, as evidenced by the following:
  - (a) for the development of the Kwai Chung Park, LCSD adopted a piecemeal approach in that it proposed the project scope including a golf driving range in response to Kwai Tsing DC members' concerns about the development of the Park in 2013, yet without prior assessment on whether the option was feasible. After knowing ArchSD's comments that the site could not accommodate a golf driving range in July 2014, LCSD had not informed Kwai Tsing DC of the site constraints and explored other viable options to address the problem. It was until November 2016, in response to Kwai Tsing DC members' concerns regarding the Park that LCSD informed them of ArchSD's views; and
  - (b) in accordance with the Development Bureau's directive in 2008, all works requirements should be incorporated into the tender documents and changes to works requirements should be avoided

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after contract award.<sup>24</sup> For the development of the Wan Po Road Pet Garden and Jordan Valley Park, additional works items were initiated from the relevant DCs and stakeholders during the construction stage, resulting in additional contract cost of \$3.2 million and \$4.8 million respectively.<sup>25</sup> LCSD should have consulted the relevant DCs and stakeholders thoroughly on their requirements during the design stage and incorporate them into the tender documents, and communicated clearly with DC and relevant stakeholders of the Administration's intent on budgetary control; and

- recommends that:
  - (a) for developing afteruse facilities in restored landfills in future, LCSD should explore the feasibility of setting up a working group between the client departments and the works agents to strengthen inter-departmental coordination in addressing the site constraints and speeding up the development process;
  - (b) LCSD should consider hiring an external consultant to assist in identifying all viable development options for the restored landfills having regard to each landfill's characteristics and limitations, so as to facilitate consultation with DCs and relevant stakeholders to avoid unnecessary delays;
  - (c) HAD should ascertain the suitability of using a term consultant in supervising the development of afteruse facilities in restored landfills having regard to the extent of technical difficulties involved. In addition, it should review the manpower and competence of its Works Section in undertaking development projects in restored landfills; and

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<sup>24</sup> In July 2008, the Development Bureau informed the Finance Committee of the Legislative Council that, for strengthening the financial management and enhancing budgetary control of capital works projects, the Government's objective was to contain the need for changes to user and programme requirements to those that were absolutely essential and necessary to prevent cost overrun due to client-initiated changes.

<sup>25</sup> For the Wan Po Road Pet Garden project, additional works items of \$3.2 million were originated from discussions with Sai Kung DC during the construction stage, or for meeting operational needs or improving the works design. For the Jordan Valley Park, additional works items of \$4.8 million were required to improve facilities of the radio-controlled model car racing circuit based on the advice of related local professional groups collected on their on-site visits during construction stage.

- (d) the Financial Services and the Treasury Bureau should consider conducting a review on its existing mechanism of reporting changes in contract requirements to CTB, setting out clearly circumstances under which government bureaux/departments should, as the situation warrants, report changes in tender requirements at the tender stage, or changes at the post-tender stage through contract variation(s) with explanation, so as to adhere to the principle of maintaining open and fair competition for all tenderers.

<b>Specific comments</b>
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125. The Committee:

Aftercare of restored landfills

- expresses astonishment and grave concern and finds it unacceptable that:
  - (a) from May 2016 to January 2017, owing to LTP overhaul works at PPVL and the forecast increase of leachate inflow in the wet season, Contractor A had to suspend LTP operation and arrange direct transfer of leachate by vehicles to the Government's other facilities for off-site treatment. Moreover, from July to November 2017, mainly due to heavy rainfall, the leachate inflow at PPVL far exceeded LTP treatment capacity and reached the alert level of leachate storage tanks. As a result, Contractor A had to directly transfer leachate by vehicles from PPVL to the Government's other facility for off-site treatment. While the transfer arrangement ceased in November 2017, mitigation measures to address the leachate inflow/overflow problem at PPVL have yet to be implemented;
  - (b) while EPD's five landfill restoration contracts require contractors to comply with the requirements of any licences issued under Water Pollution Control Ordinance (Cap. 358) ("WPCO"), apart from total nitrogen limit, the demerit point system does not cover contractors' non-compliances with the other statutory



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requirements under WPCO, e.g. maximum discharge limit of leachate; and

- (c) there were inadequate security measures in place to ensure that all facilities at restored landfills were maintained in good conditions. For example, frequent trespassing and damaged fencing were observed at some of the restored landfills;
- notes that Director of Environmental Protection has agreed with the Audit Commission ("Audit")'s recommendations in paragraph 2.42 of the Audit Report;

Development of government recreational facilities at restored landfills

- expresses serious dismay and finds it unacceptable that:
  - (a) since the early 2000s, the Government has planned/implemented projects for developing recreational facilities at seven restored landfills. The implementation of five government recreational projects at restored landfills was that one project's development progress was slow (still at preliminary planning stage) and there were cost overrun and delay for the remaining four projects;
  - (b) there was under-estimation of the tender price for the works contract of the Wan Po Road Pet Garden project as the prices of the returned tenders ranged from \$15.1 million to \$23.5 million, exceeding the pre-tender estimate of \$11.7 million by 29% to 101%; and
  - (c) the feasibility study by HAD's consultant had only allowed three months for the tender stage of the Wan Po Road Pet Garden project which would normally take six months to complete, leading to under-estimation of three months for the tender stage;
- notes that:
  - (a) LCSD had been revising the project scope of the Kwai Chung Park in collaboration with ArchSD and EPD having regard to the site constraints and views of Kwai Tsing DC, and adopted a phased approach to develop the Park with a view to speeding up the process. LCSD targeted to seek funding approval from the

Finance Committee of the Legislative Council in the 2020-2021 legislative year for commencement of works by end 2021;

- (b) since April 2008, all consultancies executed by HAD under District Minor Works Programme have included separate quantity surveying consultants to provide comprehensive advice on project cost;
- (c) Director of Leisure and Cultural Services has agreed with the Audit's recommendations in paragraphs 3.18(a) and 3.40 of the Audit Report;
- (d) Secretary for Home Affairs has agreed with the Audit's recommendation in paragraph 3.18(b) of the Audit Report;
- (e) Director of Architectural Services has agreed with the Audit's recommendations in paragraphs 3.18(c) and 3.58 of the Audit Report;
- (f) Director of Home Affairs has agreed with the Audit's recommendations in paragraphs 3.38(a) and (b), 3.39 and 3.40 of the Audit Report; and
- (g) Director of Environmental Protection has agreed with the Audit's recommendation in paragraph 3.39 of the Audit Report;

Monitoring of non-governmental bodies' afteruse facilities at restored landfills

- is surprised and regrets to note that:
  - (a) as of December 2017, the afteruse facilities at two restored landfills (namely, football training centre at the Tseung Kwan O Stage I Landfill and temporary cricket grounds at the Gin Drinkers Bay Landfill) had not been completed, with delays of 6 and 15 months respectively;
  - (b) while the land licence for the BMX park at the Gin Drinkers Bay Landfill had required the licensee to operate a high-quality facility and maximize the facility utilization, there were complaints on the poor quality and lack of maintenance of the BMX park, and the

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main track of the park was closed for maintenance for over one year from October 2016 to December 2017;

- (c) given the diversified nature of afteruse facilities, it was beyond EPD's expertise to maintain the standards and quality of sports facilities or to monitor a licensee to do so. In addition, while EPD could check a licensee's compliance with the licence conditions, it did not have the expertise and capacity to ensure that a licensee would operate a high-quality facility and maximize the facility utilization;
- (d) while some land licences contained conditions that were qualitative in nature (e.g. the need to maximize the facility utilization), quantitative/objective measures were not specified in these conditions, rendering it difficult for EPD to assess whether the licensees met such conditions;
- (e) under the land licences, for two licensees who had opened their afteruse facilities for use, upon EPD's written request, they should submit to EPD the audited financial statements on their operation and maintenance of the facilities. However, EPD had not requested the two licensees to submit audited financial statements;
- (f) as of December 2017, there were delays in implementing five of ten key actions under Batch 1 (covering three restored landfills) of the Restored Landfill Revitalization Funding Scheme ("Funding Scheme"), ranging from 1 to 28 months. In particular, no in-principle approval had been granted as of December 2017, giving rise to the longest delay of 28 months;
- (g) while EPD originally planned to invite applications under Batch 2 (covering another four restored landfills) and Batch 3 (covering any landfills unallocated from Batches 1 and 2) of the Funding Scheme in the second quarter of 2016 and the first quarter of 2017 respectively, as of December 2017, EPD was still processing the applications under Batch 1 of the Funding Scheme, and applications under Batches 2 and 3 had not been invited;
- (h) as of December 2017, EPD had not commenced a review on the technical constraints of the PPVL site and considered how best to address the issues concerned (i.e. lack of direct access, utilities and infrastructure) for afteruse of the site; and

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- (i) EPD has not formulated any guidelines for its officers to assess the reasonableness and appropriateness of related party transactions as disclosed in a licensee's audited accounts; and
- notes that:
  - (a) the football training centre commenced its operation on 3 August 2018 while the temporary cricket grounds commenced its operation on 1 September 2018;
  - (b) the Environment Bureau and EPD will seek additional resources in order to launch other batches of the Funding Scheme as soon as possible;
  - (c) Director of Environmental Protection has agreed with Audit's recommendations in paragraphs 4.19, 4.36 and 4.37 of the Audit Report; and
  - (d) Secretary for the Environment has agreed with the Audit's recommendation in paragraph 4.36 of the Audit Report.

<b>Follow-up action</b>
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126. The Committee wishes to be kept informed of the progress made in implementing the various recommendations made by the Committee and Audit.

## **A. Introduction**

The Audit Commission ("Audit") conducted a review of the Sha Tin Section of Route 8 ("Sha Tin Section").

2. Hon Abraham SHEK Lai-him declared that he was an independent non-executive director of MTR Corporation Limited. Hon SHIU Ka-fai declared that he was engaged in the trading business of construction materials but was not involved in the projects under discussion.

### Background

3. Sha Tin Section which links Sha Tin and Cheung Sha Wan was built to alleviate traffic congestion at the then existing road links between Kowloon and Sha Tin, in particular Lion Rock Tunnel and Tate's Cairn Tunnel. The construction was implemented through awarding three works contracts (Contracts A, B and C),<sup>1</sup> and a traffic control and surveillance system contract (Contract D).<sup>2</sup> The project works under Contracts A, B and D were implemented by the Highways Department ("HyD") while those works under Contract C were entrusted to the Civil Engineering and Development Department ("CEDD") for implementation. The design and construction supervision work of Sha Tin Section were conducted by Consultant X under Consultancy X for Contracts A and B, and Consultant Y under Consultancy Y for Contract C. The audit review mainly covered Contracts A, B and C.

4. The Finance Committee of the Legislative Council ("LegCo") approved funding of \$7,083.9 million in total for the investigation, detailed design and construction of Sha Tin Section. The project expenditure was \$6,179.1 million as of December 2017. Sha Tin Section was commissioned in March 2008.

5. Sha Tin Section (a 5.6 kilometre dual three-lane expressway), together with Tsing Yi Section (a 7.6 kilometre dual three-lane expressway between

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<sup>1</sup> Contract A mainly involved the construction of Lai Chi Kok Viaduct. Contract B mainly involved the construction of Eagle's Nest Tunnel while Contract C mainly involved the construction of Sha Tin Heights Tunnel and Approaches.

<sup>2</sup> Contract D involved the implementation of traffic control and surveillance system for both Sha Tin Section and Tsing Yi Section. An audit review of Tsing Yi Section in 2014 had covered this contract. See Chapter 4 (Tsing Yi Section of Route 8) of Director of Audit's Report No. 62.

*Sha Tin Section of Route 8*

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Cheung Sha Wan and Tsing Yi) of Route 8, form the Tsing Sha Control Area ("TSCA"). The management, operation and maintenance ("MOM") of TSCA has been outsourced to an operator through open tender since the commissioning of Sha Tin Section.

The Committee's Report

6. The Committee's Report sets out the evidence gathered from witnesses. The Report is divided into the following parts:

- Introduction (Part A) (paragraphs 1 to 11);
- Administration of Contract A (Part B) (paragraphs 12 to 33);
- Administration of Contract B and Contract C (Part C) (paragraphs 34 to 61);
- Usage and management of Sha Tin Section (Part D) (paragraphs 62 to 96); and
- Conclusions and recommendations (Part E) (paragraphs 97 to 99).

Public hearings

7. The Committee held three public hearings on 29 May, 11 June and 20 July 2018 respectively to receive evidence on the findings and observations of the Director of Audit's Report ("Audit Report").

Speech by Director of Audit

8. **Mr David SUN Tak-kei, Director of Audit**, gave a brief account of the Audit Report at the beginning of the Committee's public hearing held on 29 May 2018. The full text of his speech is in *Appendix 17*.

Opening statement by Secretary for Transport and Housing

9. **Mr Frank CHAN Fan, Secretary for Transport and Housing**, made an opening statement at the beginning of the Committee's public hearing held on 29 May 2018, a summary of which is as follows:

- HyD amended the Structures Design Manual for Highways and Railways ("SDM") in August 2006 and May 2013 setting out guidelines for carrying out appropriate level of independent checking on the design of different categories of new highway structures and the associated modification of existing highway structures by consultants or contractors employed by the Government;
- HyD would handle tender enquiries according to the guidelines stipulated in the Project Administration Handbook for Civil Engineering Works ("PAH"). HyD would also extend the existing tender vetting mechanism to cover responses to tender enquiries to enhance monitoring;
- HyD would require its staff and consultants to conduct independent checking on the Bills of Quantities ("BQ")<sup>3</sup> in future projects; and
- a working group was reviewing PAH on providing guidelines to carefully check that, for multi-contract projects, there were no conflicts among the time programmes for interface works in all contract works concerned.

The full text of Secretary for Transport and Housing's opening statement is in *Appendix 18*.

Vetting of deliverables produced by consultants

10. The Committee enquired about the work flow of HyD and CEDD in vetting the deliverables produced by Consultant X and Consultant Y under Sha Tin Section project.

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<sup>3</sup> BQ contain estimated quantities of various works items. BQ form part of the tender documents and subsequently the contract documents after the award of a contract.

11. **Director of Highways** and **Director of Civil Engineering and Development** provided the relevant information in the letters dated 17 May 2018 (*Appendix 19*) and 14 May 2018 (*Appendix 20*) respectively. **Director of Highways** stated in his letter that the consultants should provide and complete the services in accordance with the agreements. The services covered the preparation of the tender documents, drawings and other deliverables. As stipulated in the consultancy agreements, the consultants should submit deliverables to HyD and other concerned departments for comments and approval. HyD had issued a document entitled "HQ/GN/02 Guidelines for checking submissions of consultants" ("Checking Guidelines") (*Appendix 21*) setting out the principles for checking the submissions prepared by the consultants. **Mr Kelvin LO Kwok-wah, Project Manager/Major Works, HyD** explained at the public hearings that there was a three-tier mechanism in vetting submissions from the consultants in respect of tender documents and technical drawings. These submissions would be checked by an engineer grade staff first and would then be reviewed by a senior engineer grade staff. Finally, approval was required from a D1 or D2 directorate grade staff, depending on the nature of submissions.

## **B. Administration of Contract A**

12. The Committee noted from paragraph 2.3 of the Audit Report that HyD awarded Contract A to Contractor A in September 2003 at a contract sum of \$1,066.2 million. The contract works were completed in November 2009 (about 24 months later than the original completion date of November 2007) and the total contract expenditure was increased to \$1,445 million (\$378.8 million (36%) over the original contract sum). In addition, there were disputes under Contract A and Consultancy X.

13. The Committee enquired about the claims submitted by Contractor A under Contract A and the amount certified by Consultant X, the Engineer responsible for supervising the contract works.

14. **Mr Daniel CHUNG Kum-wah, Director of Highways** said at the public hearings and supplemented in his letter dated 8 June 2018 (*Appendix 22*) that the total amount and breakdown of the claims unresolved under Contract A and disputed by Contractor A ("Arbitration A") were as follows:



*Sha Tin Section of Route 8*

	<b>Claimed Amount (\$ million)</b>
Varied and additional works	\$588.0
Measurement	\$50.7
Prolongation Cost	\$122.6
Further financial entitlement	\$255.4
Total	\$1,016.7

The sum of claims certified by Consultant X under Contract A was \$85.7 million. This dispute was finally settled through an extra-contractual settlement sum of \$273 million.

15. According to paragraph 2.7 of the Audit Report, the disputes between HyD and Contractor A on the claims in Arbitration A mainly consisted of two key issues, namely adequacy of the design for the structure and erection of Lai Chi Kok Viaduct, and measurements and valuations of additional or varied works. Noting that Contract A was a re-measurement contract, the Committee sought explanation on "additional or varied works" and details of the additional or varied works involved in the arbitration.

16. **Director of Highways** said at the public hearings and supplemented in his letter dated 8 June 2018 (*Appendix 22*) that in accordance with the General Conditions of Contract for Civil Engineering Works, the Engineer of a public works contract should order any variation to any part of the Works that was necessary for the completion of the Works and had the power to order any variation that for any other reason should in his opinion be desirable for or to achieve the satisfactory completion and functioning of the Works by issuing variation orders. The \$588 million additional or varied works involved in Arbitration A was broken down into: \$128.5 million for viaduct structure design and erection, \$20.8 million for project design additional resources and \$438.7 million for variation orders.

17. In response to the Committee's enquiry about the process of Arbitration A between HyD and Contractor A as well as the cost details, **Director of Highways** said at the public hearings and supplemented in his letter dated 8 June 2018 (*Appendix 22*) that according to legal advice, the expenditure incurred in the mediation and the arbitration with Contractor A was confidential and sensitive information, and it was inappropriate to disclose such information to third parties as it touched on the Government's negotiation and settlement strategy and such

discussion would be prejudicial to the handling of future cases. He further explained in his letter that before accepting Contractor A's request on 5 February 2008 for mediation, HyD obtained legal opinion from the Legal Advisory Division (Works) of the Development Bureau ("LAD(W)") on 18 February 2008 about the feasibility of settling the claim by mediation. In accordance with the Government's policy of resolving construction disputes as far as possible by mediation and given that mediation was a viable and successful way of settling construction disputes, LAD(W) supported the proposal of mediation.

18. Noting from paragraphs 2.30 to 2.33 of the Audit Report about Audit's view that HyD needed to, among others, seek the relevant authority's prior agreement to the strategy or bottom line for the contract negotiation before entering into negotiation with contractors or consultants, the Committee enquired about HyD's reasons to reach a non-committal consensus with Contractor A while the Financial Services and the Treasury Bureau ("FSTB")'s agreement was still pending.

19. **Director of Highways** said at the public hearings and supplemented in his letter dated 8 June 2018 (*Appendix 22*) that:

- in December 2010, HyD had sought and obtained FSTB's prior agreement to a strategy and bottom line for proceedings in Arbitration A. While pending FSTB's agreement to a revised strategy and bottom line for proceedings in Arbitration A submitted by HyD in June 2012, Contractor A approached HyD in July 2012 to explore the possibility of settling the disputes without continuing the arbitration proceedings on a without prejudice basis; and
- for the benefits of both parties in saving huge costs, HyD agreed to discuss with Contractor A with an attempt to settle the disputes on a without prejudice basis as early as possible. In end July 2012, both parties reached a non-committal consensus to settle all the disputes under Contract A at a settlement sum of \$273 million on a "no admission of liability" basis. Upon obtaining FSTB's approval on 11 October 2012, HyD and Contractor A executed the formal settlement agreement on 24 October 2012.

20. The Committee asked about details of the extra-contractual settlement sum of \$273 million, in particular HyD's basis to support its views that not all the disputes with Contractor A settled under the \$273 million could be attributed to Consultant X

and that the proposed settlement would cost appreciably less and be beneficial to the Administration.

21. **Director of Highways** said at the public hearings and supplemented in his letter dated 8 June 2018 (*Appendix 22*) that the settlement sum was a global figure without breakdown. According to legal advice, some of the settlement sum paid in settlement of Contractor A's claims were related to additional or varied works but not the viaduct structure design and erection caused by the performance of Consultant X. Not all the disputes with Contractor A settled under the \$273 million could be attributed to Consultant X. HyD considered that the proposed settlement would cost less and be beneficial to the Government having regard to the assessed total risk exposure of the Government regarding the disputes and the costs in continuing the arbitration proceedings.

22. The Committee asked why FSTB had to spend four months to approve the settlement of the disputes under Contract A and the basis for its approval.

23. **Mr Raistlin LAU, Deputy Secretary for Financial Services and the Treasury (Treasury)**<sup>3</sup> said at the public hearings and **Secretary for Financial Services and the Treasury** supplemented in his letter dated 8 June 2018 (*Appendix 23*) that:

- FSTB exercised due diligence and considered every application for proposed settlement of disputes carefully and made its best endeavour to meet any deadline;
- in the present case, HyD sought FSTB's approval by memo on 21 June 2012 for increasing the amount of payment-into-court related to the disputes on Contract A. FSTB followed up in writing to formally seek supplementary information from HyD on 6 July 2012. HyD responded to FSTB on 7 August 2012. Shortly after that, HyD requested in writing on 10 August 2012 for FSTB to suspend processing the application;
- on 24 August 2012, HyD submitted a paper seeking FSTB's approval for the proposed settlement sum after reaching a non-committal consensus with Contractor A. FSTB subsequently wrote three times to HyD for further information, to which HyD gave a consolidated reply on 26 September 2012. After receiving HyD's further reply

on 5 October 2012, FSTB approved the proposed settlement sum on 11 October 2012; and

- FSTB approved the proposed settlement of the disputes under Contract A after taking into account the legal advice obtained and satisfied itself that a settlement proposal could best safeguard the overall interest of the Government in terms of cost, programme implication, potential liability, risk exposure, and other public interest considerations before approving any settlement proposal.

24. In view of the unsatisfactory performance of Consultant X, the Committee enquired whether HyD had imposed any sanctions on the consultant. **Director of Highways** said at the public hearings and supplemented in his letter dated 8 June 2018 (*Appendix 22*) that HyD managed the consultants according to Handbook on Selection, Appointment and Administration of Engineering and Associated Consultants and Development Bureau ("DEVB") Technical Circular (Works) No. 3/2016 - Management of Consultants' Performance. Consultant X's performance would be recorded in the quarterly reports which would be used as reference to evaluate bids for government tenders submitted by Consultant X in the future. In light of the recovery, through the extra-contractual settlement, of the amount from Consultant X to settle the disputes being on a "without admission of liability" basis, the disputes on the performance of Consultant X in the relevant design and response to tender queries issues could not be ascertained.

25. The Committee noted that HyD had vetted but not discovered Consultant X's design problem and its reply to tender enquiries was confusing. The Committee sought information on HyD's manpower strength for vetting Contract A.

26. **Director of Highways** advised in his letter dated 17 May 2018 (*Appendix 19*) that one Chief Engineer, one Senior Engineer and one Engineer were involved in the project management office for Contract A. He further said at the public hearings and supplemented in his letter dated 8 June 2018 (*Appendix 22*) that:

- HyD had already reminded its staff and consultants in May 2018 to continue to strictly follow the guidelines stipulated in SDM, and they should strictly comply with the requirements for handling tender queries including those to be enhanced in PAH; and

- for responses to tender queries, HyD would review and update, if necessary, the Checking Guidelines to incorporate principles for checking the responses to tender queries prepared by the consultants.

27. The Committee enquired about general measures taken/to be taken to better protect the Government's interests in contracting with consultants/contractors for major public works contracts in future.

28. **Secretary for Development** replied in his letter dated 8 June 2018 (*Appendix 24*) that:

- to strike a balance in apportioning risks between the contracting parties to deal with unforeseen circumstances that might happen during the execution of the contract, the Administration had to allow the consultants/contractors to submit claims to compensate their losses in the event that certain unforeseen circumstances were encountered;
- in recent years, DEVB had been advocating "collaborative partnership" in the implementation of public works projects, including the adoption of the "New Engineering Contract" ("NEC") form to enhance management efficiency and cost effectiveness;
- NEC encompassed contract provisions to encourage contracting parties to adopt a partnering approach to take forward construction works, thereby avoiding or minimizing disputes. Under the NEC form of contracts, contracting parties were required to give early warnings on any risks that could increase project costs and/or cause any delay as soon as the risks arose. The parties should then work together to address such risks in a collaborative manner to determine the appropriate measures to deal with and mitigate the risks. In this way, the NEC form could help improve the performance of construction contracts in terms of cost and time control; and
- NEC form included, among other things, target cost options which were more suitable for relatively large-scale and complex projects. A pain/gain share mechanism was built into such options to deal with any budget overrun/cost saving as compared with the final target cost, thereby setting a common objective between the contracting parties to enhance project management and tighten cost control. Contractors had the incentive to proactively propose more innovative and

cost-effective construction proposals so as to lower the cost and/or complete the works earlier.

29. The Committee noted from Note 13 of paragraph 2.21 of the Audit Report that HyD amended SDM in August 2006 setting out guidelines for carrying out appropriate level of independent checking on the design of different categories of new highway structures and the associated modification of existing highway structures by consultants or contractors employed by the Government. The Committee sought details of such independent checking and asked whether this new measure would be extended to all major public works.

30. **Director of Highways** said at the public hearings and supplemented in his letter dated 8 June 2018 (*Appendix 22*) that the independent checking would be conducted by a Checking Engineer appropriate to its Category. There were three categories of highway structures requiring checking by Checking Engineers. For Category I, the Checking Engineer should be a qualified professional in the same organization who might be from the same design team. For Category II, the Checking Engineer should be a qualified professional or checking team in the same organization but should be independent of the design team. For Category III, the Checking Engineer should be a checking team from a separate independent organization. Details of the classification of highway structures for checking are in *Appendix 22*. Since the promulgation of this new requirement in 2006, HyD had not identified any irregularities in the independent checking.

31. **Secretary for Development** replied in his letter dated 8 June 2018 (*Appendix 24*) that under the current mechanism, independent checking of the design at an appropriate level was normally required for major structures of different public works projects according to their nature, complexity and importance. With the relevant works departments, DEVB would conduct a review to align and/or update the levels of such independent design checks to take into account the latest development in construction technology.

32. The Committee considered that if Audit did not carry out an audit review on Sha Tin Section, details of the extra-contractual settlement sum of \$273 million on a "without admission of liability" basis between HyD and Contractor A would not be made known to the public. LegCo would have no means to monitor these claims or settlements, in particular for those projects which were completed within the original Approved Project Estimates and thus no additional funding approval was required by

LegCo. The Committee asked whether the Administration would consider setting up a reporting mechanism to LegCo on cases for which substantial amount was paid out by the Administration as claims or extra-contractual settlements to contractors for additional or varied works or for any other reasons.

33. **Secretary for Development** replied in his letter dated 8 June 2018 (*Appendix 24*) that:

- details of claims for additional or varied works submitted by contractors under public works contracts normally contained commercially sensitive information, the public disclosure of which to LegCo might harm the competitive or financial positions of the contractors and could result in the Government's breach of its obligation not to divulge information as provided in the contracts. Such disclosure might also prejudice the Government's position in defending against other similar claims in possible future legal proceedings; and
- there was already a check-and-balance mechanism in place for vetting and approving contract variations as well as certifying contract claims. Works departments were required to follow and comply with relevant provisions of works contracts and other prevailing Government guidelines/requirements, including the Stores and Procurement Regulations, and seek approval from the relevant internal delegated authorities in issuing contract variations and certifying claims even if the Approved Project Estimates of the projects were not exceeded. Approved contract variations and certified claims would be copied to Audit for information. If the situation warranted, Audit would conduct audits and where necessary reported the cases to the Committee. The Administration considered that the present mechanism of reporting contract variations and claim settlements to Audit had been working well.

## **C. Administration of Contract B and Contract C**

### **Contract B**

34. The Committee noted from paragraph 3.3 of the Audit Report that in September 2003, HyD awarded Contract B to Contractor B at a contract sum of \$1,836 million. The contract works were completed in February 2009

(about 15 months later than the original completion date of November 2007). The total contract expenditure was \$2,317.1 million (an increase of \$481.1 million (26%) over the original contract sum of \$1,836 million).

35. According to paragraph 3.9 of the Audit Report, Audit noted that there was a discrepancy in the thickness of smoothing shotcrete requirement for the tunnelling works of Eagle's Nest Tunnel ("EN Tunnel") between the contract clause (i.e. 100 millimetres ("mm") at maximum) and the contract drawing (i.e. 170 mm). The 170 mm smoothing shotcrete was an omitted BQ item and, eventually, HyD paid \$43.7 million to Contractor B for the works item omitted in BQ. The Committee enquired about whether spot check or full check had been adopted for the tender documents and the contract drawings prepared by Consultant X under Contract B in accordance with the Checking Guidelines; the reasons for not detecting the above discrepancy and whether HyD considered it necessary to review the Checking Guidelines.

36. **Project Manager/Major Works, HyD** said at the public hearings and **Director of Highways** supplemented in his letter dated 10 August 2018 (*Appendix 25*) that:

- in accordance with the Checking Guidelines, HyD had spot checked the documents, designs and drawings and selected specific areas or items to carry out detailed check on the Particular Specifications, drawings and BQ prepared by Consultant X under Contract B. Based on records, HyD had checked the section of the tender documents in relating to the thickness of the smoothing shotcrete requirements and drawing and provided comments to Consultant X;
- notwithstanding the checking and approval by HyD, according to the consultancy agreement, it should not affect the responsibilities of Consultant X to provide and complete the professional services including the preparation of tender documents; and
- the checking of the tender documents including Particular Specifications, drawings and BQ was divided and assigned amongst different officers at that time in order to complete the checking within a short period. This might be a reason for not detecting the discrepancy amongst the documents. HyD would review and update the Checking Guidelines to enhance the checking system and had reminded individual project teams to assign the checking of concerned or related



sections amongst different parts of tender documents to the same officer.

**Director of Highways** and **Project Manager/Major Works, HyD** added at the public hearings that the tender documents and the drawings for the contract were voluminous with some 7 000 pages and it would be difficult to check all information therein to ensure that there were no errors and omissions.

37. In response to the Committee on how the rate of 170 mm shotcreting was determined, **Project Manager/Major Works, HyD** said at the public hearings and **Director of Highways** supplemented in his letter dated 10 August 2018 (*Appendix 25*) that pursuant to General Conditions of Contract for Civil Engineering Works Clauses 59 and 61 (*Appendix 26*), the omitted works item was valued at a rate as determined based on the rate of a similar item in BQ of Contract B and \$43.7 million was paid to Contractor B subsequently for the omitted works item. The Government had to pay the contractor for the work done according to the rate even if the shotcreting of 170 mm thickness was specified in the tender documents and BQ. However, **Director of Highways** agreed at the public hearings that the cost might not be \$43.7 million if there was no discrepancy in the thickness of shotcreting item in the tender documents and BQ.

38. According to paragraph 3.11 of the Audit Report, Contractor B made a claim for the costs of performing controlled blasting for the formation of the tunnel perimeter which was omitted in BQ. The Committee enquired whether the formation of the tunnel perimeter could be accomplished by techniques other than controlled blasting. **Project Manager/Major Works, HyD** said at the public hearings and **Director of Highways** supplemented in his letter dated 10 August 2018 (*Appendix 25*) that according to Particular Specification of Contract B, controlled blasting technique was specified for the formation of the tunnel perimeter. Controlled blasting was omitted in BQ possibly because it was not recognized at that time that the original extent of works covered by tunnel excavation in Standard Method of Measurement section 18 did not include controlled blasting. According to General Conditions of Contract for Civil Engineering Works Clause 59, any items omitted from BQ should be corrected by the Engineer and the value of the works should be ascertained in accordance with Clause 61 (*Appendix 26*). Consultant X had handled this omitted item in accordance with the contract.

39. With reference to Table 10 in paragraph 3.20 of the Audit Report, the Committee asked about the formula for calculating the prolongation cost and whether

Consultant X's assessment of the extension of time ("EOT") and prolongation costs for the works in Butterfly Valley and EN Tunnel was justified. The Committee also sought details of the mechanism for HyD to check the consultant's assessment of EOT and hence the prolongation costs.

40. **Project Manager/Major Works, HyD** said at the public hearings and **Director of Highways** supplemented in his letter dated 10 August 2018 (*Appendix 25*) that:

- prolongation cost was generally the time related cost (e.g. the costs of a contractor's site establishment, site overheads and general plant) that was typically affected by a delay to the critical path of construction works. Contracts included provisions for granting EOT for completion due to events covered by the contract provisions, such as additional works, inclement weather etc. The Engineer would also assess the actual situation of each case, with the prolongation cost calculated as the time related cost additionally incurred for the relevant delay duration;
- Consultant X had made the relevant decisions in administering Contract B in accordance with the contract provisions. Consultant X's assessment of EOT and prolongation costs for the works in Butterfly Valley and EN Tunnel was justified as EOTs were due to additional works at the three slopes arising from actual site conditions undetected at the design stage; and
- according to the terms of the consultancy, consultants should report to HyD all claims for additional payment and EOT made by the contractor, and submit the details and justifications of the preliminary assessments to enable HyD to provide its views. The consultants should take into account HyD's views before making their final assessments. No EOT was granted to Contractor B for delay due to its own faults.

41. With reference to paragraphs 3.22(a) and (b) of the Audit Report, the Committee sought the reasons for conducting additional slope stabilization works at Slope A; reasons for unable to include the additional slope stabilization works to Slope A and installation of watermains on Slope A in the tender documents; and whether HyD considered the scale of site investigations ("SI") conducted by

Consultant X for the works in Butterfly Valley sufficient before the award of contract.

42. **Project Manager/Major Works, HyD** said at the public hearings and **Director of Highways** supplemented in his letter dated 10 August 2018 (*Appendix 25*) that:

- additional slope stabilization works at Slope A were conducted to cope with actual site conditions undetected in earlier SI. Owing to the additional slope stabilization works to Slope A, the installation of watermain on Slope A was required to be realigned to cope with the actual topographical conditions;
- as the actual site conditions were undetected in earlier SI and the additional slope stabilization works were not anticipated at the design stage, the additional slope stabilization works to Slope A and the realignment of watermain on Slope A were unable to be included in the tender documents;
- Consultant X had conducted site or ground investigations for Contract B according to "Geoguide 2 – Guide to Site Investigation" ("Geoguide 2") published by the Geotechnical Engineering Office ("GEO") of CEDD and sought GEO's comments according to Lands and Works Branch Technical Circular No. 3/88. Taking into account GEO's no adverse comments on the ground investigation plan prepared by Consultant X, HyD staff concerned at that time considered the scale of SI sufficient before the award of contract; and
- HyD agreed to continue to conduct thorough SI as far as practicable with a view to incorporating comprehensive and adequate information for design and tender purposes. Geoguide 2 had stated that the uncertainties could be reduced but, except by complete excavation, could never be wholly eliminated by a more intensive investigation.

43. **Secretary for Development** added in his letter dated 8 August 2018 (*Appendix 27*) that the Administration had published Geoguide 2 giving guidance on good SI practices for project offices to plan and carry out investigation of the sites, with the purposes of assessing their suitability for civil engineering and building works, and acquiring knowledge of site characteristics that affected the design and construction of such works and the security of adjacent properties.

The Administration also conducted regular review and updated Geoguide 2 (last updated in December 2017) to incorporate the latest technical guidelines and the best practices relating to SI, thereby enhancing the accuracy of site condition information obtained from SI for public works projects.

44. According to paragraph 3.23 of the Audit Report, Contractor B contended that it was beyond his reasonable contemplation at the time of tender that additional ground investigation and stabilization works to another two slopes located in the vicinity affected by the blasting works of EN Tunnel had to be carried out before obtaining a blasting permit. At the public hearings, **Project Manager/Major Works, HyD** said that additional ground investigation and stabilization works had to be carried out as squatter huts erected on the above two slopes might be affected by the blasting works. The Committee asked whether Consultant X had, before preparing the tender documents, assessed the possible impact of the blasting works on the relevant squatter huts; HyD's guidelines for assessing the impact of public works projects on the nearby residents in the vicinity of works sites, in particular the structure of their houses; and measures taken/to be taken to enhance the accuracy of site condition information to be obtained from preliminary SI for major public works projects in the future.

45. **Project Manager/Major Works, HyD** said at the public hearings and **Director of Highways** supplemented in his letter dated 10 August 2018 (*Appendix 25*) that:

- for public works involving blasting operations, the project proponent should have obtained GEO's agreement to the pre-contract blasting assessment report ("BAR"), which aimed to identify all sensitive receivers, assess any adverse effects and risks arising from the transport, storage and use of explosives for blasting, and to demonstrate the feasibility of carrying out the blasting works in a practical, safe and acceptable manner. "Guidance Note on How to Apply for a Blasting Permit" published by the Mines Division of CEDD provided guidelines for the project proponent to follow in preparing BAR. A copy of the Guidance Note is in *Appendix 25*;
- before preparing the tender documents, Consultant X had assessed and proposed an allowable blasting vibration induced, i.e. in terms of peak particle velocity for the village houses including the squatter huts in the vicinity of the proposed tunnel blasting works with reference to international standards, so as to avoid possible blasting impact on the

houses. GEO and the Water Supplies Department had reviewed BAR prepared and submitted by Consultant X according to Lands and Works Branch Technical Circular No. 3/88 and had no comments on the blasting assessment results;

- BAR prepared in design stage had assessed the possible impact of the blasting works on the relevant squatter huts and the two slopes, confirming that they would not be affected. It was considered that additional ground investigation and stabilization works to the above two slopes were not necessary. During construction stage of the project, GEO reconfirmed that they had no adverse comments on the allowable peak particle velocity proposed for the village houses including the squatter huts; and
- a complaint about some wall tiles having fallen from the top of kitchen door frame was received from the occupant of the concerned squatter hut in early 2004 before the commencement of the blasting works of EN Tunnel. The additional ground investigation and subsequent slope stabilization works were required by GEO to make the slope stability more conservative.

46. **Secretary for Development** added in his letter dated 8 August 2018 (*Appendix 27*) about the general guidelines and requirements in respect of assessing the impact of rock blasting that:

- section 4.1.2 of Geoguide 2 advised that it was essential that investigations should cover all factors that might affect adjacent properties. Where possible, records of ground levels, groundwater levels and relevant particulars of adjacent properties should be made before, during and after construction. Where damage to existing structures was a possibility, adequate photographic records should be obtained. Adjacent buildings, structures and buried services, including pipes conveying water, gas or sewage, should be specifically considered, as they might be affected by vibrations, ground settlement or movement, or changes in groundwater levels during and after construction activities on the site. Hospitals and other buildings containing sensitive instruments or apparatus should be given special consideration;
- for projects involving rock blasting, sections 3.5 and 4.6.13 of Chapter 4 of PAH stipulated that project offices should conduct and

submit a blasting assessment as part of the geotechnical submissions to GEO for comment and agreement. The blasting assessment submission should contain, among other information, a report containing an assessment of the effects of blasting works, and proposals of preventive measures, to demonstrate that the proposed blasting would not cause any injury to persons or damage to property and sensitive receivers that might be damaged or destabilized by the proposed blasting works; and

- the contractor should obtain a blasting permit from Commissioner of Mines prior to commencement of the blasting works. The contractor should demonstrate that all necessary measures had been in place to prevent the blasting works from causing damage or adverse effects to adjacent facilities and structures, significant disruption to traffic or undue nuisance to the public, or any risk of injury to the public and the people working on site. The blasting permit would not be issued until the blasting assessment and method statement had been found satisfactory and the site was ready for blasting with all the site preparatory works completed to the required standards in PAH. The relevant parts of the guidelines are in *Appendix 27*.

47. Noting from paragraph 3.26(d) of the Audit Report that HyD would carry out extensive horizontal directional coring ("HDC") to obtain more accurate information in advance of the tunnel construction works of the Central Kowloon Route (connecting the West Kowloon reclamation and the proposed Kai Tak Development) project, the Committee asked whether this technique would be used for all tunnelling works in the future.

48. **Director of Highways** advised in his letter dated 10 August 2018 (*Appendix 25*) that HDC could be very useful for investigating deep tunnels as this technique could provide continuous information along the tunnel alignment to minimize uncertainty of the tunnel works and enhance the management of risks for the project. Where feasible and appropriate, HyD would use this technique more for tunnelling works in future. Notwithstanding this, the use of HDC was subject to limitations, such as the driven depths and lengths, the type of core samples that could be taken and the type of geotechnical tests that could be performed etc., and therefore might not be applicable to all tunnelling works.

49. **Secretary for Development** added in his letter dated 8 August 2018 (*Appendix 27*) that the Administration encouraged the use of long horizontal boreholes parallel to the proposed tunnel alignment to obtain more comprehensive ground information and relevant guidelines were available in "GEO Technical Guidance Note No. 24 – Site Investigation for Tunnel Works". The relevant parts of the guidelines are in *Appendix 27*.

50. The Committee enquired about whether any sanctions had been imposed on Consultant X in respect of the discrepancy between the thickness of the smoothing shotcrete requirements in the tender documents and technical drawings as well as the omission of controlled blasting item in BQ.

51. **Director of Highways** advised in his letter dated 10 August 2018 (*Appendix 25*) that according to the guidelines stipulated at that time in DEVB Technical Circular (Works) No. 2/2009 on management of consultants' performance, the performance score of a consultant on individual consultancy was based on an overall assessment of individual aspects concerned. These performance scores would be consolidated into the consultant's performance rating to be considered in the bidding of future consultancies. Regulating actions, such as suspension from bidding, would be taken against a consultant by the project department concerned under serious circumstances e.g. court conviction, violation of laws, bankruptcy, the consultant having received two consecutive adverse performance reports, etc. HyD had been conducting assessments on Consultant X's overall performance in accordance with the guidelines stipulated in the above circular and considered that the overall performance of Consultant X was acceptable, with no regulating action taken.

### Contract C

52. The Committee noted from paragraph 3.28 of the Audit Report that in November 2002, CEDD awarded Contract C to Contractor C at a contract sum of \$1,073.8 million. The contract works were completed in September 2008 (about three months later than the extended completion date). The total contract expenditure was \$1,199.6 million (an increase of \$125.8 million (12%) over the original contract sum of \$1,073.8 million).

53. With reference to paragraph 3.31(c) of the Audit Report in respect of Clauses A and B of Contract C, the Committee sought the reasons for CEDD to

decide that Clause B took precedence over Clause A in case of discrepancies, and whether it was a usual practice to put two separate clauses in a works contract to stipulate the facilitation period.

54. **Mr LAM Sai-hung, Director of Civil Engineering and Development** said at the public hearings and supplemented in his letter dated 7 August 2018 (*Appendix 28*) that:

- Particular Specification Clause 1.82(6) of Contract C (i.e. Clause A in Audit Report) stipulated that Contractor C should allow Contractors B and D to access the site and commence installation works of electrical and mechanical ("E&M") facilities and the traffic control surveillance system for a period of nine months. This meant that Contractor C had to provide facilitation works such as providing temporary lighting and ventilation inside tunnels during this period;
- the last sentence of Particular Specification Clause 1.82(6) stated that Contractor C should retain possession of and carry out upkeeping works (including facilitation works) for the duration as stipulated in Particular Specification Clause 1.82(1), i.e. until completion of section XVI or such earlier date as instructed by the Engineer (Clause B in Audit Report);
- as the requirement under Clause B was related to the time for completion of section XVI of the works calculated from and including the date for commencement which was stipulated under Clause 49 of the General Conditions of Contract for Civil Engineering Works, it should take precedence over Clause A which only specified the period for facilitation works;
- it was up to the contract drafter to choose the most appropriate mechanism to stipulate the required facilitation period in the contract documents depending on the specific need and circumstances of individual contracts; and
- the Particular Specification Clauses could be revised to simply stipulate that a nine-month facilitation period should be provided upon completion of sections VIII, IX and XI without making reference to the completion of section XVI of the Works.



55. The Committee asked whether extra cost was incurred arising from a shorter facilitation period of about 7.5 months for Contract C instead of 9 months as originally envisaged (paragraph 3.31(d) of the Audit Report refers). **Director of Civil Engineering and Development** said at the public hearings and supplemented in his letter dated 7 August 2018 (*Appendix 28*) that items were included in BQ under Contract C for the contractor to price for the provision of facilitation works on a monthly basis which were subject to remeasurement. The contractor was only paid for the actual period of facilitation works provided under the contract and therefore no extra cost was incurred.

56. As Director of Civil Engineering and Development said at the public hearings that BQ of Contract C provided a cost for eight months of facilitation period item, the Committee asked why the contract contained an eight-month facilitation period instead of nine months as originally envisaged. **Director of Civil Engineering and Development** said at the public hearings and supplemented in his letter dated 7 August 2018 (*Appendix 28*) that the estimated quantity of eight months inserted in the tender BQ for pricing by tenderers was based on the shorter period of facilitation works (i.e. 7.5 months) specified under Clause B. However, the actual period for provision of facilitation works was subject to remeasurement and paid under relevant BQ items.

57. According to paragraphs 3.35(b) and (c) of the Audit Report, 12 months were provided by Contractor C to further extend the provision of facilitation works. The Committee enquired about the measures to be taken to enhance the accuracy of the estimation of facilitation period and to eliminate the processing error in drafting contract clauses (paragraph 3.34(b) of the Audit Report refers).

58. **Director of Civil Engineering and Development** said at the public hearings and supplemented in his letter dated 7 August 2018 (*Appendix 28*) that under the current practice, the procuring departments or their consultants were required to carefully check whether the programmes of interfacing works were consistent with that managed by the procuring departments/consultants. The consultants were required to seek the procuring departments' comments on the time programmes prior to incorporation of the relevant information in the tender documents. The above requirements would be formally incorporated into PAH for implementation. **Director of Highways** advised in his letter dated 10 August 2018 (*Appendix 25*) that HyD would remind its staff and consultants, in preparing tender documents in future, to continue to carefully check and update that the prevailing

time programmes and associated contractual provisions for interface works in all contracts involving interfaces with other contracts were consistent.

59. **Secretary for Development** added in his letter dated 8 August 2018 (*Appendix 27*) that:

- to ensure the consistency of time programmes for interface works in public works contracts involving multi-contract arrangements, Section 9.1 in Chapter 5 of PAH required that for projects (a) involving sequential handling-over of the project site among contractors of concurrent contracts and/or; (b) in which the work progress of one contractor was dependent on that of another contractor in the same project, the project offices should carefully assess the compatibility of the multi-contract arrangement with the preferred contract forms of the project; and
- time allowance for programme of interfacing works varied depending on the scale and complexity of the interfacing works to be encountered by the project concerned. For a consistent approach in assessing the allowance for critical site activities, including interfacing works with other parties, and in response to Audit's recommendation in paragraph 3.38(b) of the Audit Report, the Administration had enhanced Chapter 5 of PAH in 2018 to introduce a checklist under its Appendix 5.57 requesting project offices to complete the checklist with relevant directorate officer's endorsement prior to tender invitation.

60. The Committee further asked the Administration measures taken/to be taken to strengthen the checking of accuracy of tender documents, contract clauses, drawings and BQ prepared by consultants for major public works contracts in future.

61. **Secretary for Development** advised in his letter dated 8 August 2018 (*Appendix 27*) that:

- sections 1.3 to 1.5 of Chapter 5 of PAH required project offices to exercise care in avoiding any ambiguities or discrepancies in the documents which formed a contract, seek advice from contract advisers on tender documents when genuine doubts emerged and submit tender

documents for contracts estimated to exceed \$300 million in value to LAD for legal vetting prior to calling for tenders;

- the Administration had also updated section 7.2 of Chapter 5 of PAH to specify the need of minimizing omitted items as far as practicable and BQ should undergo a checking process to ensure the completeness and accuracy of BQ and elimination of major errors. To enhance the accuracy of BQ prepared by the consultants, the Administration highlighted in section 3.12 of Chapter 6 of PAH and DEVB Technical Circular (Works) No. 7/2017 requesting the project offices and the consultants to conduct a pre-tender cross-checking in the preparation of BQ and use Building Information Modeling technology in project design stages, which could enhance the preparation and/or checking of BQ; and
- the Administration also kept reminding project offices to duly reflect the consultants' performance in their performance reports in accordance with Appendices A and B of DEVB Technical Circular (Works) No. 3/2016 if deficiencies in the quality of tender documents prepared by them were identified. The relevant parts of the guidelines are in *Appendix 27*.

#### **D. Usage and management of Sha Tin Section**

62. With reference to paragraph 4.3 of the Audit Report that EN Tunnel and Sha Tin Heights Tunnel of Sha Tin Section were not congested during weekday peak hours, the Committee enquired about the reasons for not conducting a study or review on the road usage of Sha Tin Section between March 2008 and January 2017.

63. **Ms Mable CHAN, Commissioner for Transport** said at the public hearings and supplemented in her letter dated 4 July 2018 (*Appendix 29*) that:

- to further enhance the usage of Sha Tin Section to duly relieve the traffic congestion of the connecting roads between Kowloon and Sha Tin, the Transport Department ("TD") had been conducting detailed analysis and assessment with a focus on eliminating the bottleneck at the existing roads leading to Route 8;
- TD had been striving to implement the required road works projects, including the construction of an additional lane at the approach road

*Sha Tin Section of Route 8*

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from Tai Po Road (Sha Tin Section) leading to Route 8 near Scenery Court,<sup>4</sup> the widening of Tai Po Road (Sha Tin Section) to a dual 3-lane carriageway,<sup>5</sup> and taking forward the strategic highway project of Trunk Road T4;<sup>6</sup> and

- in view of the above, TD had not conducted any study on the usage of Sha Tin Section.

64. In reply to the Committee about proposals received by TD on diverting bus and/or public minibus routes as well as red minibuses ("RMBs") to pass through EN Tunnel and Sha Tin Heights Tunnel, **Commissioner for Transport** said at the public hearings and supplemented in her letter dated 4 July 2018 (*Appendix 29*) that:

- since the commissioning of Sha Tin Section in 2008 and up to December 2017, TD had proposed a total of 39 improvement items for introducing bus routes or strengthening the existing bus services passing through relevant sections of Route 8. After consultation with the relevant District Councils, 32 items of them had been or would be implemented, and the remaining seven items were either not materialized or revoked after implementation. Details of the measures are in *Appendix 29*;
- seven items under the Route Planning Programmes 2018-2019 that involved frequency enhancement and service introduction had the support of the relevant District Councils and were scheduled for implementation between the third quarter of 2018 and the first quarter of 2019. Details of the measures are in *Appendix 29*; and
- the Government's established policy was to encourage the conversion of RMBs to green minibuses for the sake of ensuring service quality level. Since the service routeings and frequencies of RMBs were not subject to regulation, RMBs, for maintaining effective traffic management, were normally restricted from providing service in newly developed areas with a comprehensive rail and bus network and from using newly commissioned expressways. TD could allow minor

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<sup>4</sup> The relevant works were completed in 2015.

<sup>5</sup> The funding for the relevant works was approved by the LegCo Finance Committee in May 2018. The works will commence in mid 2018.

<sup>6</sup> The relevant works include the construction of a strategic road which connects Tsing Sha Highway and Shing Mun Tunnel Road in the west as well as with Sha Tin Road in the east, to provide a linkage between West Kowloon/Tsuen Wan and Ma On Shan and Sai Kung.

relaxation on a case-by-case basis and was studying whether the restrictions on RMBs to operate on some road sections of Tsing Sha Highway could be relaxed.

65. In response to the Committee's enquiry about the tender exercise of MOM of TSCA, **Commissioner for Transport** said at the public hearings and supplemented in her letter dated 4 July 2018 (*Appendix 29*) that upon the commissioning of TSCA on 19 March 2008, TD had conducted two open tender exercises to outsource MOM of TSCA. As the current MOM contract would end on 18 September 2019, TD was drafting tender documents for the next TSCA MOM contract in consultation with relevant government departments. It was expected that tender invitation would be conducted in the fourth quarter of 2018 and the contract could be awarded to the successful tenderer in the first quarter of 2019.

66. According to paragraph 4.11(c) of the Audit Report, a Government Monitoring Team ("GMT"), comprising officers from TD, HyD, the Electrical and Mechanical Services Department ("EMSD") and the Architectural Services Department ("ArchSD"), was responsible for monitoring the TSCA MOM operator's performance. The Committee sought the responsibilities and purview of each department.

67. **Commissioner for Transport** said at the public hearings and supplemented in her letter dated 4 July 2018 (*Appendix 29*) that:

- there was a clear division of responsibilities among the four departments, with each overseeing a specific area of work: TD monitored the daily operation as well as traffic and incident management; HyD monitored the maintenance of bridges, viaducts and tunnel structures; EMSD monitored the maintenance of all E&M systems and equipment; and ArchSD monitored the maintenance of building structures;
- in response to Audit's recommendations, TD, in collaboration with three GMT members, had consolidated a list of "GMT Members Monitoring Responsibility for TSCA", which clearly set out the specific areas of responsibilities of various departments. The list is provided in *Appendix 29*; and

- the departments concerned normally held meetings with the operator once every one to three months to maintain communication and monitor its performance. TD would also hold joint special meetings with the operator and relevant departments as necessary to monitor the operator's performance in undertaking important projects. TD would, where necessary, hold meetings with other GMT members to discuss management and maintenance issues relating to TSCA.

68. **Director of Highways** said at the public hearings and supplemented in his letter dated 26 June 2018 (*Appendix 30*) that the division of responsibilities and purview among members of GMT was not specified in the original contract. TD subsequently issued "GMT Members Monitoring Responsibility for TSCA" to the operator in March 2018 to supplement the current TSCA MOM contract.

69. In response to the Committee's enquiry on how each GMT member department, since the TSCA MOM contract was awarded to the current operator, monitored and reviewed the performance of the operator, **Commissioner for Transport, Director of Highways** and **Director of Electrical and Mechanical Services** provided the monitoring measures taken by their departments in their replies dated 4 July 2018 (*Appendix 29*), 26 June 2018 (*Appendix 30*) and 22 June 2018 (*Appendix 31*) respectively. All three departments had put in place a monitoring mechanism including site inspections, working meetings and assessment reports and regular reports to be submitted by the operators. TD and EMSD also stationed staff at TSCA. Surprise and non-scheduled inspections would be conducted by TD to evaluate the operator's performance and by EMSD to check the compliance of the operator with the manning level requirements of E&M staff.

70. **Mrs Sylvia LAM YU Ka-wai, Director of Architectural Services** said at the public hearings and supplemented in her letter dated 22 June 2018 (*Appendix 32*) that:

- since the commencement of the TSCA MOM contract, the operator had provided ArchSD with monthly building maintenance submissions for checking on building inspection records, proposed repairs and the corresponding progress to monitor the operator's performance; and
- ArchSD would follow up with the operator to make good the deficiencies, if spotted, and report serious maintenance issues to TD for regulatory actions under the contract. Given that the performance of

the operator had been monitored regularly, it was unnecessary for ArchSD to have meetings with the operator and/or other relevant departments. Ad hoc meetings would be arranged if situation warranted.

71. With reference to paragraphs 4.16 to 4.19 and Table 17 in paragraph 4.26 of the Audit Report, the Committee sought explanation for TD and ArchSD not monitoring the manning level of administrative and supporting staff and building maintenance staff respectively after the commencement of the TSCA MOM contract in September 2013 and up to January 2017, and the measures taken/to be taken to ensure compliance of the operator with the manning level of the abovesaid staff.

72. **Commissioner for Transport** said at the public hearings and supplemented in her letter dated 4 July 2018 (*Appendix 29*) that:

- for contract management, TD had all along adopted a two-pronged approach in monitoring performance of the operator, namely the input-oriented approach (e.g. the minimum manning level requirement) and performance-oriented approach (e.g. whether financial information could be submitted within the prescribed period), depending on the nature of the work;
- since commencement of the contract, TD had adopted the performance-oriented approach in monitoring the services provided by the administrative and supporting staff, including scrutinizing the human resources information, monthly performance reports or monthly financial information prepared by the operator, checking whether the information concerned was submitted on time, and conducting regular site inspections of the cleansing services and catering provisions to staff. The operator had all along been providing the required level of services in a timely manner, and no irregularity had been found;
- as the administrative and supporting staff were mainly back-up staff (e.g. clerks, chefs, accounting and administrative staff, etc.) who were not engaged in the core frontline services of the control area, there were no minimum manning level requirements for administrative and supporting staff in the tender documents. Taking into account Audit's recommendation, TD had been monitoring the operator's compliance with the manning level requirements for administrative and supporting

staff specified in the contract by requesting the operator to submit manning information about these staff since February 2018; and

- TD would also check the operator's compliance with the manning level requirement for the administrative and supporting staff through site inspections and monthly operations reports submitted by the operator. According to the staff attendance records furnished by the operator, TD's inspection records<sup>7</sup> and scrutiny of the monthly operations reports submitted by the operator since 2018, the manning level of the administrative and supporting staff had met the contract requirement since the contract came into effect.

73. **Director of Architectural Services** said at the public hearings and supplemented in her letter dated 22 June 2018 (*Appendix 32*) that:

- the operator's manning level of building maintenance staff had not been checked earlier on but ArchSD had already completed the checking exercise and informed TD of the results for follow-up actions;
- between September 2013 and January 2017, the operator's shortfall in building maintenance staff not subject to liquidated damages ("LD") was as below:
  - (a) shortfall in Building Manager from 16 February 2015 to 8 March 2015;
  - (b) shortfall in Building Services Engineer from 25 February 2014 to 29 February 2016 and 1 November 2016 to 31 January 2017; and
  - (c) shortfall in Building Services Inspector from 11 November 2014 to 1 February 2015 and 7 February 2016 to 31 January 2017; and
- ArchSD had conducted monthly check on the manning level of the operator's building maintenance staff according to its submissions of staff attendance records and salary payrolls, etc. Random site checks on building maintenance staff's attendance had been and would be carried out in the inspection of TSCA.

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<sup>7</sup> During the inspections held from September 2013 to January 2017, TD only recorded the manning level of operations staff.



74. **Mr TAI Tak-him, Acting Director of Electrical and Mechanical Services** said at the public hearings that the contract allowed the contractor to outsource some E&M works if it could not employ sufficient E&M staff to make up the shortfall. **Commissioner for Transport** said that despite the outsourcing, LD would still be imposed if there was a shortfall of staff subject to LD. The Committee asked Commissioner for Transport and Director of Electrical and Mechanical Services to clarify the seemingly conflicting statements.

75. **Director of Electrical and Mechanical Services** replied in his letter dated 22 June 2018 (*Appendix 31*) that according to the TSCA MOM contract, the operator was allowed to outsource part of the scheduled E&M maintenance works when needed, with the prior consent of TD and EMSD. The contract also stipulated that if the operator failed to employ the required number of E&M staff (non-key personnel), LD should be imposed to the operator. If shortfall of E&M staff still existed after outsourcing some E&M maintenance works, LD would be imposed on the operator. **Commissioner for Transport** supplemented in her letter dated 4 July 2018 (*Appendix 29*) that the operator outsourced some of the E&M repair work from October 2013 to April 2014. Such outsourced work could be used to offset LD otherwise imposed for the E&M staff shortfall during that period. As at end May 2018, except for several staff members engaged in catering services who were outsourced staff, all staff members in TSCA were directly employed by the operator.

76. Noting from Table 17 in paragraph 4.26 of the Audit Report that there were 24 E&M staff shortfall on average from January to September 2017, the Committee enquired about the reasons and whether EMSD had assessed the impact on the operation of TSCA.

77. **Acting Director of Electrical and Mechanical Services** said at the public hearings and **Director of Electrical and Mechanical Services** replied in his letter dated 22 June 2018 (*Appendix 31*) that according to the information provided by the operator, they encountered difficulties in employing E&M engineering staff due to the tight employment market resulted from a high demand for E&M staff in a number of new or on-going major infrastructure projects in recent years. The operator had been taking mitigation measures, including: (a) arranging staff to work overtime to compensate for the vacancies as far as possible; and (b) outsourcing part of the maintenance works. It was observed that the operation and performance of the E&M systems in TSCA had in general remained satisfactory throughout the MOM contract.

78. According to paragraph 4.23 of the Audit Report, the operator was required to deploy a total of 403 staff, of which 60 staff were not subject to LD for any shortfall. The Committee enquired about the follow-up actions/sanctions that could be taken by the relevant departments if there was a shortfall in the staff that were not subject to LD.

79. **Director of Highways** said at the public hearings and supplemented in his letter dated 26 June 2018 (*Appendix 30*) that when there was a shortfall of highway maintenance staff (regardless of being subject to LD or not),<sup>8</sup> HyD would urge the operator in writing to provide replacement as soon as possible and closely monitor the operator's performance to see whether it had been affected by the staff shortfall. HyD would also reflect any shortfall in highway maintenance staff as well as the performance of the operator in quarterly performance reports on the aspect of highway maintenance and inform TD accordingly.

80. **Acting Director of Electrical and Mechanical Services** said at the public hearings and **Director of Electrical and Mechanical Services** supplemented in his letter dated 22 June 2018 (*Appendix 31*) that whenever there was shortfall of E&M staff not subject to LD identified, EMSD would urge the operator to rectify the shortfall promptly. To address this issue, EMSD in collaboration with TD would study whether LD should be applied to all level of E&M staff in formulating the contract terms of the next TSCA MOM contract.

81. **Director of Architectural Services** said at the public hearings and supplemented in her letter dated 22 June 2018 (*Appendix 32*) that ArchSD had informed TD of the operator's shortfall in building maintenance staff (not subject to LD) for TD to take follow-up actions according to contract provisions. ArchSD had evaluated the performance of the operator on the aspect of building maintenance on quarterly performance reports, including any shortfall in building maintenance staff, and advised TD for compiling overall performance reports on the operator.

82. **Commissioner for Transport** said at the public hearings and supplemented in her letter dated 4 July 2018 (*Appendix 29*) that:

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<sup>8</sup> There was shortfall for a Deputy Highway Maintenance Engineer (Roadwork) from 19 September to 6 November 2013 and a second Deputy Highway Maintenance Engineer (Structures) from 19 September 2013 to 11 August 2014 and from 25 April to 16 October 2016.

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- of the 403 staff on duty, 343 frontline staff were subject to LD for any shortfall, including 186 operations staff (responsible for daily operation, traffic and incident management), 34 highway maintenance staff, 122 E&M staff and 1 building maintenance staff. It was stipulated in the current contract that LD were imposed for any staff shortfall in the ranks of frontline operational staff to ensure the operator deployed sufficient frontline staff who were critical in carrying out the routine operations and maintenance duty in the control area;
- as for the remaining 60 staff not subject to LD for any shortfall, they included the principal (management and professional) staff, the supporting staff for highway maintenance and building maintenance, as well as the administrative and supporting staff (such as administrative manager, chefs and clerks, etc.);
- under the contract terms, for any reason a vacancy of the principal (management and professional) staff suddenly arose, the operator should inform TD within three working days, and employ an eligible person to fill the vacant post as soon as possible upon approval by TD. Any failure on the part of the operator to employ the above 60 staff not subject to LD for any shortfall in compliance with the staff manning level requirement stipulated in the contract also constituted a breach of the contract;
- if there was persistent shortfall in staff, the Government might impose penalties on the operator pursuant to the Tsing Sha Control Area Ordinance (Cap. 594) or the MOM contract; and
- the manning of 80 "leave relief" staff was for filling vacancies of operations and E&M staff in the AM/PM/Night shift to maintain the 24-hour TSCA operation. Whenever there was a staff shortfall in a required duty shift, the operator would suitably deploy replacement staff by deploying "leave relief". If there was still a staff shortfall, it would fill the vacancies through overtime work or acting appointment arrangements. The normal operation of TSCA had generally been maintained without being affected by staff shortfall.

83. In response to the Committee's enquiry about the sanctions against the operator's failure to meet the performance requirements/operating standards, **Commissioner for Transport** said at the public hearings and supplemented in her letter dated 4 July 2018 (*Appendix 29*) that:

- under sections 24 and 25 of the Tsing Sha Control Area Ordinance, if an operator was in breach of a management agreement, the relevant authority might impose, with the approval of the Chief Executive in Council, a financial penalty on the operator in accordance with the Ordinance in respect of each breach pursuant to the ordinance. Where the breach was capable of being remedied, the amount of financial penalty imposed for each breach should not exceed \$10,000 on the first occasion; if the relevant breach continued, the Government might impose a further financial penalty not exceeding \$10,000 on the operator for each day. Where the breach was not capable of being remedied, the amount of financial penalty imposed for each breach should not exceed \$20,000 on the first occasion, \$50,000 on the second occasion and \$100,000 on the third or a subsequent occasion; and
- under Clauses 91 to 93 of the TSCA MOM contract, for any fault or breach of the management contract by the operator which would cause damage to the Government, the Government might seek compensation from the operator. For any staff shortfall or failure to attain the operating standards of core services, the operator was required to pay LD to the Government. TD on two occasions claimed LD to compensate for the administrative expenses incurred by the Government due to the operator's failure to arrive at the scenes of traffic accidents on time. In serious cases which met the MOM contract's relevant provisions, such as the operator's repeated non-compliances with the contract requirements, the Government might even terminate the contract.

84. The Committee noted Commissioner for Transport's statement at the public hearings that a staff could take up the duties of two posts and this would not be included in the calculation of LD and asked for TD's explanation on this.

85. **Commissioner for Transport** said at the public hearings and supplemented in her letter dated 4 July 2018 (*Appendix 29*) that at present, the operator must arrange for sufficient staff on duty in the AM/PM/Night shifts in accordance with contract requirements. A staff member on shift duty with qualifications meeting the requirements of more than one post could take up different posts in different shifts, which might also offset the relevant amount of LD. However, if any staff shortfall persisted after the doubling-up/acting arrangements, corresponding LD would be imposed on the operator.

86. The Committee was concerned that a staff member could take up duties of two posts in different shifts as it would lead to overtime work of the staff members. In this connection, the Committee enquired the number of staff of the operator who had performed overtime work and the total number of hours of overtime work performed by these staff from January to December 2017.

87. **Commissioner for Transport** provided the monthly overtime work statistics of the operator from January to December 2017 in her letter dated 4 July 2018 (*Appendix 29*). In gist, operations staff, E&M staff and highway maintenance staff all performed overtime work. The number of staff and working hours ranged from 90 to 110 and 2 182 to 6 600 for operations staff, 22 to 50 and 789 to 1 450 for E&M staff, and 8 to 33 and 84 to 696 for highway maintenance staff.

88. The Committee enquired about the reasons for not setting out a clear methodology for calculating LD in the tender documents as well as in the contracts, which had led to taking 27 months (from November 2014 to January 2017) for discussing and agreeing with the operator on the methodology.

89. **Commissioner for Transport** said at the public hearings and supplemented in her letter dated 4 July 2018 (*Appendix 29*) that:

- in May 2013, after selection of the successful tenderer for the TSCA MOM contract, the Central Tender Board informed TD that sanctions should be imposed if the operator failed to comply with its committed minimum manning level, with a view to conveying a clear message that the operator had to fully comply with the contract requirements and address its inadequacies as soon as possible;
- TD then had to negotiate with the selected tenderer on the insertion of relevant clauses in the contract within a short period of time. After obtaining the agreement of the selected tenderer, the sanction clauses relating to LD for staff shortfall were incorporated into the TSCA MOM contract. Since the above recommendation by the Central Tender Board was made after the successful tenderer was selected, such clauses had not been included in the tender documents;
- given the limited time in preparing the contract clauses, only "in-principle" clauses were stipulated in the contract. In implementing the contract, TD had on a number of occasions sought

legal advice from the Department of Justice on the interpretation of LD clauses. It also held numerous meetings with EMSD, HyD and the operator to discuss and agree on the methodology for calculating the amount of LD (e.g. how sick leave or annual leave, or outsourcing and acting appointment would be taken into account);

- in early 2017, after the methodology and details for calculating the amount of LD imposed for staff shortfall had been largely sorted out, the Government proceeded to work out the format of submitting information and develop the worksheet for checking the submitted information; and
- in May 2017, the first letter on imposing LD for staff shortfall was issued. In June 2017, TD discussed and agreed with the operator the arrangement for collecting in batches LD for the period from the commencement of contract to end 2017 by March 2018, and the operator had paid off to TD the full amount of LD on time.

90. With reference to paragraphs 4.33 and 4.34 of the Audit Report, as of December 2017, TD and EMSD had not ascertained the amount of LD for E&M staff from 1 March 2014 to 31 December 2016 and 1 October to 31 December 2017. The Committee asked for the reasons for such a delay and if remedial actions had been taken.

91. **Acting Director of Electrical and Mechanical Services** said at the public hearings and **Director of Electrical and Mechanical Services** replied in his letter dated 22 June 2018 (*Appendix 31*) that the TSCA MOM contract was the first contract of its kind to include LD provisions for the manning level. From November 2014 to January 2017, EMSD had assisted TD to seek legal advice from the Department of Justice and resolve the dispute with the operator as to how LD should be imposed, such as outsourcing to compensate for part of the E&M staff shortfall. Upon settlement of the dispute, EMSD began to calculate and provide TD with the ascertained amount of LD in batches, from May 2017 to February 2018, for the period from the commencement of the TSCA MOM contract (i.e. September 2013) to December 2017.

92. With reference to paragraphs 4.33 and 4.34 of the Audit Report, the Committee sought details of records of imposing and collecting LD from the operator

and whether TD, HyD, EMSD and ArchSD had cross-checked the accuracy of the information/records submitted by the operator in relation to the calculation of LD.

93. **Commissioner for Transport** said at the public hearings and supplemented in her letter dated 4 July 2018 (*Appendix 29*) that TD's records of LD imposed on the operator in respect of E&M amounted to about \$19.84 million for the period from September 2013 to March 2018. TD had checked all records submitted by the operator in relation to the imposition of LD, including attendance records, human resources records and staff qualification, etc., to ensure that the records were accurate and the staff on duty were qualified. In addition, TD also regularly deployed officers to conduct surprise checks to monitor and recorded the manning level of operations staff in TSCA on site.

94. **Director of Highways** said at the public hearings and supplemented in his letter dated 26 June 2018 (*Appendix 30*) that the total amount of LD payable by the operator for the shortfall of highway maintenance staff since commencement of the TSCA MOM contract was \$1.37 million and the breakdown is in *Appendix 30*. HyD had verified all relevant records provided by the operator for calculating LD in respect of the shortage of highway maintenance staff and had required the operator to provide supplementary documents when needed. HyD had also copied all correspondence regarding the shortfall of highway maintenance staff and the calculation of LD to TD for its reference.

95. **Director of Electrical and Mechanical Services** replied in his letter dated 22 June 2018 (*Appendix 31*) that EMSD had been assisting TD to review and verify the calculation of LD to be imposed on the operator due to shortfall of E&M staff by: (a) checking monthly reports, attendance records and relevant supporting documents submitted by the operator; (b) cross-checking the operator's records against EMSD's surprise check records; and (c) requesting the operator to submit supplementary information where necessary.

96. **Director of Architectural Services** said at the public hearings and supplemented in her letter dated 22 June 2018 (*Appendix 32*) that ArchSD had ascertained that there was shortfall in building maintenance staff that was subject to LD from 1 March to 14 September 2014 (about 6.5 months), and TD had collected LD of about \$0.12 million from the operator. ArchSD had checked the calculation of LD against the operator's staff attendance records and payrolls. Random site

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checks on the operator staff's attendance in relation to the calculation of LD would also be carried out.

**E. Conclusions and recommendations**

<p><b>Overall comments</b></p>
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97. The Committee:

- notes that it has been a practice for government works departments to engage external consultants in major public works contracts to provide planning, design, tender document and drawings preparation, and construction supervision services as the relevant departments might not have adequate in-house manpower resources or the necessary expertise to undertake the services;
- strongly reminds government works departments that unsatisfactory performance of consultants would have significant impact on the progress of relevant works which might cause long delays and incur additional costs substantially if subsequent rectification works were required. The relevant works departments should bear an ultimate responsibility and role to monitor the satisfactory performance of these consultants;

Monitoring the performance of consultants by the Highways Department

- expresses astonishment and grave concern that Contracts A, B and C for the construction of Sha Tin Section of Route 8 ("Sha Tin Section")<sup>9</sup> were completed later than the respective original/extended contract completion dates by about 24, 15 and 3 months respectively, and their total contract expenditures (\$1.4 billion, \$2.3 billion and \$1.2 billion) were 36%, 26% and 12% higher than the respective original contract sums;

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<sup>9</sup> The construction of Sha Tin Section was implemented through awarding three works contracts, namely Contracts A, B and C, and a traffic control and surveillance system contract (Contract D). The design and construction supervision work of Sha Tin Section were conducted under Consultancy X (for Contracts A and B by Consultant X) and Consultancy Y (for Contract C by Consultant Y).



- expresses astonishment and grave concern and finds it unacceptable about the Highways Department ("HyD")'s failure to properly vet the outputs and monitor the performance of Consultant X for managing Contracts A and B in the construction of Lai Chi Kok Viaduct and Eagle's Nest Tunnel ("EN Tunnel") under the Sha Tin Section project as evidenced by the following:
  - (a) for the permanent structure of Lai Chi Kok Viaduct, the construction and erection loadings did not appear to have been properly considered in the design which was undertaken by Consultant X;
  - (b) Consultant X's contract drawings only showed the use of balanced cantilever method of construction but did not indicate the need for certain requisite construction systems;
  - (c) Consultant X's response to a tender query requesting clarification of the temporary loads used in the design could lead to confusion that the construction and erection loadings had been considered in Consultant X's design. The response had been copied to HyD when issued;
  - (d) in the event, on a "without admission of liability" basis, the Government paid an extra-contractual settlement sum of \$273 million to Contractor A for settlement of all the disputes under Contract A and succeeded in recovering \$133.1 million only from Consultant X for settlement of all the disputes under Consultancy X;
  - (e) discrepancy in the thickness of smoothing shotcrete required for the tunnelling works of EN Tunnel between the contract drawing (i.e. 170 millimetres ("mm")) and the contract clause (i.e. 100 mm at the maximum) under Contract B; and
  - (f) the performing of controlled blasting for the formation of the tunnel perimeter had not been specified as a Bills of Quantities ("BQ")<sup>10</sup> item under Contract B;

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<sup>10</sup> BQ contain estimated quantities of various works items. BQ form part of the tender documents and subsequently the contract documents after the award of a contract.

- is unconvinced and finds it totally unacceptable by HyD's explanation at the public hearings that the above discrepancies and omissions in the tender documents and drawings for Contracts A and B were due to the voluminous tender documents and drawings having some 7 000 pages;
- strongly demands the works departments, in particular HyD, to review the existing mechanism in vetting the tender documents and consultants' outputs, including but not limited to the designs, accuracy of the tender documents and contract clauses, drawings and responses to tender queries, so that any discrepancies, omissions and irregularities could be identified in time. Consideration should also be given to exploring the use of latest and advanced information technology to assist the relevant staff and consultants in conducting the preparation, vetting and checking processes in the tendering exercises for public works projects;

Mechanism to report to the Legislative Council on claims and extra-contractual settlement for public works projects

- considers it inexplicable and unacceptable that the Legislative Council ("LegCo") has no effective means to monitor the claims and extra-contractual settlement between the relevant works departments and the contractors/consultants for public works projects, in particular for those for which no approval for cost overruns is required by LegCo. In the case of Sha Tin Section, whereas the expenditure incurred for the project was below the approved funding,<sup>11</sup> LegCo had not been informed of an extra-contractual settlement sum of \$273 million on a "without admission of liability" basis which had been agreed between HyD and Contractor A in 2012 before the relevant Director of Audit's Report ("Audit Report") was published;
- strongly demands the Development Bureau to explore setting up a mechanism through which the Finance Committee and/or other appropriate committees of LegCo should be informed about details of any extra-contractual settlement and/or other forms of settlement agreements exceeding a certain threshold sum that have been made in respect of major public works projects in order to enhance transparency and monitoring by LegCo on the public works expenditures;

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<sup>11</sup> As of December 2017, the Administration had incurred around \$6.2 billion for the Sha Tin Section project, \$904.8 million (13%) below approved funding.

Use of spare capacity of Sha Tin Section

- expresses great dissatisfaction and finds it unacceptable about the Transport Department ("TD")'s ineffective planning and subsequent efforts in using EN Tunnel and Sha Tin Heights ("STH") Tunnel to alleviate the traffic congestion at the road links between Kowloon and Sha Tin as evidenced by the following:
  - (a) as of April 2017, the average weekday traffic demand per hour for morning and afternoon peak hours for EN Tunnel and STH Tunnel were less than 80%, whereas the demand for Lion Rock Tunnel and Tate's Cairn Tunnel exceeded 120%; and
  - (b) as of December 2017, only five franchised bus routes passing through EN Tunnel and STH Tunnel provided whole-day services, whereas there were 21 and 23 franchised bus routes with whole-day services passing through Lion Rock Tunnel and Tate's Cairn Tunnel respectively. In addition, from time to time, there were requests for bus and minibus services passing through Sha Tin Section;
- notes that:
  - (a) in January 2017, TD had commenced a consultancy study on the rationalization of traffic distribution of the three road harbour crossings (i.e. Cross Harbour Tunnel, Eastern Harbour Crossing and Western Harbour Crossing) and the three land tunnels between Kowloon and Sha Tin (i.e. Lion Rock Tunnel, Tate's Cairn Tunnel, as well as EN Tunnel and STH Tunnel); and
  - (b) in 2018-2019 Bus Route Planning Programmes, TD had proposed seven improvement items for bus routes passing through Sha Tin Section, which had the support of relevant District Councils; and
- strongly urges TD to:
  - (a) consult the respective District Councils and relevant stakeholders thoroughly in advance on proposed new traffic arrangements before a major transport network and infrastructure is opened in order to ensure that these new arrangements could be implemented in a timely manner to address the needs of the local population; and

- (b) regularly review the usage of any new transport network and infrastructure and update the respective District Councils and the LegCo Panel on Transport of the usage figures. In case of persistent under-utilization, more frequent consultation with the respective District Councils and the LegCo Panel on Transport should be made on the need of additional improvement measures.

<b>Specific comments</b>
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98. The Committee:

Administration of Contract A

- expresses astonishment and grave concern and finds it unacceptable that:
  - (a) in the construction of Lai Chi Kok Viaduct, HyD had disputes under both Contract A and Consultancy X, mainly on viaduct design issues. In the course of disputes resolution, having considered legal opinion and views of an engineering expert on the design for the permanent structure of Lai Chi Kok Viaduct, HyD noted that:
    - the construction and erection loadings did not appear to have been properly considered in the design;
    - the contract drawings only showed the use of balanced cantilever method of construction but did not indicate the need for certain requisite construction systems; and
    - Consultant X's response to a tender query requesting clarification of the temporary loads used in the design could lead to confusion that construction and erection loadings had been considered in Consultant X's design. Such confusing response to the tender query could also give rise to grounds for claims on the design for viaduct structure and erection from Contractor A;

- (b) HyD had not sought the Financial Services and the Treasury Bureau's prior agreement to the strategy or bottom line for negotiation before discussing with Contractor A and reaching a non-committal consensus to settle all the disputes under Contract A at an extra-contractual settlement sum of \$273 million in July 2012; and
  - (c) the post-completion review for Contract A and Consultancy X was completed in January 2018, which was one year after the completion of Consultancy X and about ten years after the project had been commissioned, contrary to the guidance given in the relevant Technical Circular<sup>12</sup> that a post-completion review should be carried out within a reasonable period, say six months, after the substantial completion of a consultancy agreement or a works contract;
- notes that:
- (a) HyD will remind its staff and consultants to strictly follow the guidelines stipulated in the Structures Design Manual for Highways and Railways, including carrying out appropriate level of independent checking on the design of different categories of new highway structures and the associated modification of existing highway structures;
  - (b) Director of Highways has agreed with the Audit Commission ("Audit")'s recommendations in paragraphs 2.25 and 2.40 of the Audit Report; and
  - (c) Director of Civil Engineering and Development has agreed with Audit's recommendation in paragraph 2.26 of the Audit Report;

#### Administration of Contract B and Contract C

- expresses astonishment and grave concern and finds it unacceptable that:

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<sup>12</sup> Environment, Transport and Works Bureau Technical Circular (Works) No. 26/2003 on "Post-completion Review on Major Consultancy Agreements and Major Works Contracts under Public Works Programme"

- (a) under Contract B, there was a discrepancy in the thickness of smoothing shotcrete required for the tunnelling works of EN Tunnel between the contract drawing (i.e. 170 mm) and the contract clause (i.e. 100 mm at maximum). The 170 mm smoothing shotcrete was an omitted BQ item. In this case, HyD paid \$43.7 million to Contractor B for this omitted item;
  - (b) under Contract B, due to unclear contract clauses for measurement of tunnelling works, the performing of controlled blasting for the formation of the tunnel perimeter had not been specified as a BQ item. In the event, HyD paid \$54.6 million to Contractor B for the works item for this omitted item;
  - (c) under Contract B, total prolongation costs of \$34.5 million were awarded due to extensions of time (331 and 114 days for two sections of works respectively) for additional works at three slopes arising from actual site conditions undetected in earlier site investigations; and
  - (d) due to a processing error by the Civil Engineering and Development Department during the drafting of Contract C, two clauses mismatched, resulting in a shorter facilitation period of about 7.5 months instead of the agreed duration of 9 months. In addition, the scheduled periods of facilitation works in Contracts B, C and D also deviated from the agreed interface handover schedule;
- notes that:
- (a) HyD will continue to conduct thorough site investigations as far as practicable with a view to incorporating comprehensive and adequate information for design and tender purposes;
  - (b) Director of Highways has agreed with Audit's recommendations in paragraphs 3.18, 3.25 and 3.39 of the Audit Report; and
  - (c) Director of Civil Engineering and Development has agreed with Audit's recommendations in paragraphs 3.38 and 3.39 of the Audit Report;

Usage and management of Sha Tin Section

- expresses great dissatisfaction and finds it unacceptable that:
  - (a) a Government Monitoring Team ("GMT"), comprising officers from TD, HyD, the Electrical and Mechanical Services Department ("EMSD") and the Architectural Services Department ("ArchSD"), is responsible for monitoring performance of the operator for the Tsing Sha Control Area ("TSCA"). However, as of December 2017, the respective monitoring roles and responsibilities among GMT members were neither specified in the management, operation and maintenance ("MOM") contract for TSCA nor documented in other records;
  - (b) as of December 2017, the manning level of administrative and supporting staff and that of building maintenance staff had not been monitored since the commencement of TSCA MOM contract in September 2013;
  - (c) as of December 2017, there was no documentation showing that HyD and ArchSD (being GMT members) had prepared reports on TSCA operator's performance under their respective purview, and that TD (being the contract administrator) had required them to provide such reports;
  - (d) it was not specified in the tender documents or TSCA MOM contract that the manning level requirement for 80 "leave relief" staff (out of the total manning level of 483 staff specified in the contract) was for mandatory compliance by operators or for reference purpose only;
  - (e) TSCA operator was not able to continuously maintain the required staff manning level since the commencement of the contract in September 2013. For the period from January to September 2017, out of the required manning level of 343 staff subject to liquidated damages ("LD") for any shortfall, there was a shortfall of about 25 staff on average (around 7% of the required level), mostly attributed to the shortfall of about 24 electrical and mechanical ("E&M") staff (around 20% of the required manning level of 122 E&M staff);

- (f) due to unclear methodology set out in TSCA MOM contract, it took 27 months for TD to discuss and agree with the operator the methodology for calculating the amount of LD; and
  - (g) as of December 2017, for E&M staff, in respect of TSCA operator's staff shortfall for about 51.5 months (from 19 September 2013 to 31 December 2017), TD and EMSD had not yet ascertained the amount of LD for 37 months. Moreover, for building maintenance staff, information on staff shortfall remained to be checked as of December 2017 and no LD had been imposed up to December 2017;
- notes that:
- (a) TD, in collaboration with other GMT members, has consolidated a list of "GMT Members Monitoring Responsibility for TSCA", which has been attached to the current TSCA MOM contract and will also be incorporated in the next contract to be renewed in 2019;
  - (b) TD has started monitoring the operator's compliance with the manning level requirement for administrative and supporting staff as specified in TSCA MOM contract;
  - (c) HyD and ArchSD will provide quarterly assessment of TSCA operator's performance (from December 2017 onwards) on aspects under their respective purview, and provide assessment results to TD for compilation of the overall quarterly assessment reports on performance;
  - (d) TD will review whether and how to specify the manning level of "leave relief" staff and administrative and supporting staff in future TSCA MOM contracts;
  - (e) during the current TSCA MOM contract term, TD and EMSD will continue to monitor the manning level of E&M staff and take necessary actions in a timely manner;
  - (f) Commissioner for Transport has agreed with Audit's recommendations in paragraphs 4.8 and 4.36 of the Audit Report;



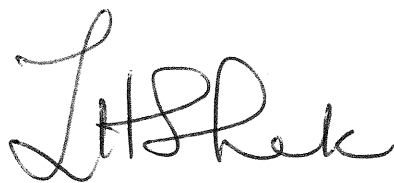
- (g) Director of Electrical and Mechanical Services has agreed with Audit's recommendations relating to E&M monitoring of TSCA MOM contract in paragraph 4.36 of the Audit Report; and
- (h) Director of Highways and Director of Architectural Services have agreed with Audit's recommendation in paragraph 4.37 of the Audit Report; and
- strongly urges TD, HyD, EMSD and ArchSD to review MOM contracts and other similar contracts under their respective purview which have stipulated the manning level requirements of staff to ensure that the contractors comply with such requirements and, in cases of non-compliance, to take follow-up actions in a timely manner in order that the services will not be adversely affected.

<b>Follow-up action</b>
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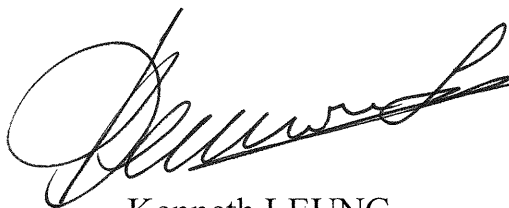
99. The Committee wishes to be kept informed of the progress made in implementing the various recommendations made by the Committee and Audit.

SIGNATURES OF THE CHAIRMAN,  
DEPUTY CHAIRMAN AND MEMBERS OF THE COMMITTEE

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Abraham SHEK Lai-him  
(Chairman)



Kenneth LEUNG  
(Deputy Chairman)



Paul TSE Wai-chun



Steven HO Chun-yin



LAM Cheuk-ting



SHIU Ka-fai



Tanya CHAN

16 October 2018

**CHAPTERS IN THE DIRECTOR OF AUDIT'S REPORT NO. 70  
DEALT WITH IN THE PUBLIC ACCOUNTS COMMITTEE'S REPORT**

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**Director of  
Audit's Report  
No. 70**

**P.A.C.  
Report No. 70A**

<u>Chapter</u>	<u>Subject</u>	<u>Chapter</u>
1	Management of restored landfills	1
8	Sha Tin Section of Route 8	2

**RULES OF PROCEDURE OF  
THE LEGISLATIVE COUNCIL OF  
THE HONG KONG SPECIAL ADMINISTRATIVE REGION**

**72. Public Accounts Committee**

(1) There shall be a standing committee, to be called the Public Accounts Committee, to consider reports of the Director of Audit –

- (a) on the accounts of the Government;
- (b) on such other accounts required to be laid before the Council as the committee may think fit; and
- (c) on any matter incidental to the performance of his duties or the exercise of his powers as the committee may think fit.

(2) The committee shall also consider any report of the Director of Audit laid on the Table of the Council which deals with examinations (value for money audit) carried out by the Director relating to the economy, efficiency and effectiveness of any Government department or public body or any organization to which his functions as Director of Audit extend by virtue of any Ordinance or which receives public moneys by way of subvention.

(3) The committee shall consist of a chairman, deputy chairman and 5 members who shall be Members appointed by the President in accordance with an election procedure determined by the House Committee. *(L.N. 214 of 2005)*

(3A) The chairman and 2 other members shall constitute a quorum of the committee. *(L.N. 214 of 2005)*

(3B) In the event of the temporary absence of the chairman and deputy chairman, the committee may elect a chairman to act during such absence. *(L.N. 214 of 2005)*

(3C) All matters before the committee shall be decided by a majority of the members voting. Neither the chairman nor any other member presiding shall vote, unless the votes of the other members are equally divided, in which case he shall give a casting vote. *(L.N. 214 of 2005)*

(4) A report mentioned in subrules (1) and (2) shall be deemed to have been referred by the Council to the committee when it is laid on the Table of the Council.

(5) Unless the chairman otherwise orders, members of the press and of the public shall be admitted as spectators at meetings of the committee attended by any person invited by the committee under subrule (8).

(6) The committee shall meet at the time and the place determined by the chairman. Written notice of every meeting shall be given to the members and to any person invited to attend a meeting at least 5 clear days before the day of the meeting but shorter notice may be given in any case where the chairman so directs.

(7) *(Repealed L.N. 214 of 2005)*

(8) The chairman or the committee may invite any public officer, or, in the case of a report on the accounts of or relating to a non-government body or organization, any member or employee of that body or organization, to give information or any explanation or to produce any records or documents which the committee may require in the performance of its duties; and the committee may also invite any other person to assist the committee in relation to any such information, explanation, records or documents.

(9) The committee shall make their report upon the report of the Director of Audit on the accounts of the Government within 3 months (or such longer period as may be determined under section 12 of the Audit Ordinance (Cap. 122)) of the date on which the Director's report is laid on the Table of the Council.

(10) The committee shall make their report upon the report of the Director of Audit mentioned in subrule (2) within 3 months (or such longer period as may be determined by the Council) of the date on which the Director's report is laid on the Table of the Council.

(11) Subject to these Rules of Procedure, the practice and procedure of the committee shall be determined by the committee.

**Paper presented to the Provisional Legislative Council  
by the Chairman of the Public Accounts Committee  
at the meeting on 11 February 1998 on  
Scope of Government Audit in the  
Hong Kong Special Administrative Region -  
'Value for Money Audits'**

**SCOPE OF WORK**

1. The Director of Audit may carry out examinations into the economy, efficiency and effectiveness with which any bureau, department, agency, other public body, public office, or audited organisation has discharged its functions.
2. The term "audited organisation" shall include -
  - (i) any person, body corporate or other body whose accounts the Director of Audit is empowered under any Ordinance to audit;
  - (ii) any organisation which receives more than half its income from public moneys (this should not preclude the Director from carrying out similar examinations in any organisation which receives less than half its income from public moneys by virtue of an agreement made as a condition of subvention); and
  - (iii) any organisation the accounts and records of which the Director is authorised in writing by the Chief Executive to audit in the public interest under section 15 of the Audit Ordinance (Cap. 122).
3. This definition of scope of work shall not be construed as entitling the Director of Audit to question the merits of the policy objectives of any bureau, department, agency, other public body, public office, or audited organisation in respect of which an examination is being carried out or, subject to the following Guidelines, the methods by which such policy objectives have been sought, but he may question the economy, efficiency and effectiveness of the means used to achieve them.

## GUIDELINES

4. The Director of Audit should have great freedom in presenting his reports to the Legislative Council. He may draw attention to any circumstance which comes to his knowledge in the course of audit, and point out its financial implications. Subject to these Guidelines, he will not comment on policy decisions of the Executive Council and the Legislative Council, save from the point of view of their effect on the public purse.

5. In the event that the Director of Audit, during the course of carrying out an examination into the implementation of policy objectives, reasonably believes that at the time policy objectives were set and decisions made there may have been a lack of sufficient, relevant and reliable financial and other data available upon which to set such policy objectives or to make such decisions, and that critical underlying assumptions may not have been made explicit, he may carry out an investigation as to whether that belief is well founded. If it appears to be so, he should bring the matter to the attention of the Legislative Council with a view to further inquiry by the Public Accounts Committee. As such an investigation may involve consideration of the methods by which policy objectives have been sought, the Director should, in his report to the Legislative Council on the matter in question, not make any judgement on the issue, but rather present facts upon which the Public Accounts Committee may make inquiry.

6. The Director of Audit may also -

- (i) consider as to whether policy objectives have been determined, and policy decisions taken, with appropriate authority;
- (ii) consider whether there are satisfactory arrangements for considering alternative options in the implementation of policy, including the identification, selection and evaluation of such options;
- (iii) consider as to whether established policy aims and objectives have been clearly set out; whether subsequent decisions on the implementation of policy are consistent with the approved aims and objectives, and have been taken with proper authority at the appropriate level; and whether the resultant instructions to staff accord with the approved policy aims and decisions and are clearly understood by those concerned;

- (iv) consider as to whether there is conflict or potential conflict between different policy aims or objectives, or between the means chosen to implement them;
- (v) consider how far, and how effectively, policy aims and objectives have been translated into operational targets and measures of performance and whether the costs of alternative levels of service and other relevant factors have been considered, and are reviewed as costs change; and
- (vi) be entitled to exercise the powers given to him under section 9 of the Audit Ordinance (Cap. 122).

## **PROCEDURES**

7. The Director of Audit shall report his findings on value for money audits in the Legislative Council twice each year. The first report shall be submitted to the President of the Legislative Council within seven months of the end of the financial year, or such longer period as the Chief Executive may determine. Within one month, or such longer period as the President may determine, copies shall be laid before the Legislative Council. The second report shall be submitted to the President of the Legislative Council by the 7th of April each year, or such date as the Chief Executive may determine. By the 30th April, or such date as the President may determine, copies shall be laid before the Legislative Council.

8. The Director's report shall be referred to the Public Accounts Committee for consideration when it is laid on the table of the Legislative Council. The Public Accounts Committee shall follow the rules governing the procedures of the Legislative Council in considering the Director's reports.

9. A Government minute commenting on the action Government proposes to take in respect of the Public Accounts Committee's report shall be laid on the table of the Legislative Council within three months of the laying of the report of the Committee to which it relates.

10. In this paper, reference to the Legislative Council shall, during the existence of the Provisional Legislative Council, be construed as the Provisional Legislative Council.



**Witnesses who appeared before the Committee  
(in order of appearance)**

Mr WONG Kam-sing	Secretary for the Environment
Mr Jack CHAN Jick-chi	Under Secretary for Home Affairs
Ms Linda LAW Lai-tan	Principal Assistant Secretary (Recreation and Sport) <sup>2</sup> Home Affairs Bureau
Mr Donald TONG Chi-keung	Director of Environmental Protection
Mrs Vicki KWOK WONG Wing-ki	Deputy Director of Environmental Protection (2)
Ms Betty CHEUNG Miu-han	Assistant Director (Environmental Infrastructure) Environmental Protection Department
Mr FONG Kin-wa	Principal Environmental Protection Officer (Landfills and Development) Environmental Protection Department*
	Acting Assistant Director (Environmental Infrastructure) Environmental Protection Department**
Ms Michelle LI Mei-sheung	Director of Leisure and Cultural Services
Ms Linda CHEUNG Yuk-shan	Chief Executive Officer (Planning) 2 Leisure and Cultural Services Department
Mrs Sylvia LAM YU Ka-wai	Director of Architectural Services
Mr Edward TSE Cheong-wo	Project Director/3 Architectural Services Department
Mr Chris LIU Chi-ho	Chief Project Manager 302 Architectural Services Department
Miss Janice TSE Siu-wa	Director of Home Affairs
Ms Eugenia CHUNG Nga-chi	Assistant Director (2) Home Affairs Department

Dr Samuel CHUI Ho-kwong	Assistant Director (Nature Conservation and Infrastructure Planning) Environmental Protection Department
Mr Frank CHAN Fan	Secretary for Transport and Housing
Mr Tony LI Yeuk-yue	Principal Assistant Secretary for Transport and Housing (Transport) <sup>2</sup>
Ms Judy CHUNG Sui-kei	Principal Assistant Secretary for Transport and Housing (Transport) <sup>5</sup>
Mr LIU Chun-san	Under Secretary for Development
Mr Daniel CHUNG Kum-wah	Director of Highways
Mr Kelvin LO Kwok-wah	Project Manager/Major Works Highways Department
Mr LAM Sai-hung	Director of Civil Engineering and Development
Mr WONG Wai-man	Project Manager, North Development Office Civil Engineering and Development Department
Ms Mable CHAN	Commissioner for Transport
Ms Stella LEE Yim-fong	Assistant Commissioner /Management and Paratransit Transport Department
Mr HUI Chiu-kin	Assistant Director (Property Services) Architectural Services Department
Mr Alfred SIT Wing-hang	Director of Electrical and Mechanical Services
Mr LAW Man-tim	Deputy Project Manager, North Development Office Civil Engineering and Development Department
Mr TAI Tak-him	Acting Director of Electrical and Mechanical Services
Mr Alfred NG Kai-ming	Officer-in-charge (Restored Landfill Revitalisation) Environmental Protection Department

Ms Ida LEE Bik-sai

Acting Director of Leisure and Cultural Services

Miss Charmaine WONG Hoi-wan

Deputy Director (1)  
Home Affairs Department

\* for the hearings held on 14 and 26 May 2018.

\*\* for the hearing held on 26 June 2018.

**A brief account of Chapter 1 of Report No. 70  
“Management of restored landfills”  
by the Director of Audit  
at the Public Hearing of the Public Accounts Committee  
of the Legislative Council on Monday, 14 May 2018**

Mr. Chairman,

Thank you for inviting me to give a brief account of Chapter 1 of Report No. 70 of the Director of Audit, entitled “Management of restored landfills”.

This Audit Report comprises four PARTs.

PART 1 of the Report, namely “Introduction”, describes the background to the audit.

Today, there are 13 closed landfills in Hong Kong. These landfills, closed between 1975 and 1996, occupy a total area of 320 hectares. Landfills are different from any ordinary piece of land because the buried waste undergoes continuous biodegradation, generates landfill gas and leachate during the process and causes differential ground settlement. Hence, these landfills demand dedicated and effective efforts of restoration.

Restoration comprises two stages. Stage 1 is restoration works which includes the construction and installation of restoration facilities. Stage 2 mainly relates to the operation and maintenance of restoration facilities for 30 years after completion of such facilities (i.e. aftercare work). Both stages aim to ensure that landfills are maintained in a safe condition and are environmentally acceptable for appropriate future beneficial uses (i.e. afteruse of restored landfills). The Environmental Protection Department (EPD) has used a design-build-operate (DBO) form of contract for the restoration of the 13 closed landfills. Under the DBO contract arrangement, a contractor is responsible for the design and construction of restoration facilities and the aftercare work after completion of these facilities. In 2016-17, the total actual operating cost of the aftercare work was \$67.9 million.

In general, the development of afteruse projects at restored landfills is implemented by the Government (including the EPD, the Home Affairs

Department, the Leisure and Cultural Services Department (LCSD) and the Architectural Services Department) or non-governmental bodies. According to the EPD, in light of the many development constraints (e.g. no piling at landfills), revitalisation of restored landfills for recreational use is the most suitable option.

PART 2 of the Report examines the EPD's monitoring of the contractors' aftercare work at restored landfills.

The EPD's landfill restoration contractors need to comply with the statutory requirements stipulated under the relevant environmental legislations and the various major environmental parameters stipulated in the contracts.

The Audit Commission (Audit) noted that, in 2016, the EPD received complaints on suspected malpractice of the landfill restoration contractor of the Pillar Point Valley Landfill (PPVL) in the operation of some restoration facilities. The EPD then took proactive follow-up actions and its investigations found that, during the nearly two-year period between December 2015 and November 2017, the contractor had non-compliances with various statutory requirements stipulated under the Water Pollution Control Ordinance and certain contractual requirements. As a result, the contractor was fined a total of \$208,000. In addition, monthly payments totalling about \$7.7 million were deducted from the contractor, of which \$5.3 million were deducted in 2016-17, accounting for about one-third of the amount payable to the contractor in that year.

In light of the above-mentioned complaints, the EPD completed a review on the environmental monitoring practices at its waste facilities. The review recommended, among others, the installation of advanced monitoring equipment at PPVL and 4 other restored landfills with a view to automating the monitoring work and detecting cases of non-compliance in a more timely manner. However, as of March 2018, there was delay in the installation of certain advanced equipment items. Therefore, Audit has recommended that the EPD should expedite the progress of installing the advanced equipment and strengthen its monitoring actions before automated data monitoring systems are in place.

PART 3 of the Report examines the development of government recreational facilities at restored landfills.

Since the early 2000s, the Government has planned projects for developing recreational facilities at 7 restored landfills. Audit found that 5 of these projects had encountered different development problems, of which 1 project was still at preliminary planning stage and 4 projects had increases in costs and works delay.

For example, regarding the 3 projects selected for case studies, Audit noted that, in the course of exploring the technical feasibility or tendering for the projects, the government departments for developing the concerned facilities could not fully address and consider issues including ground settlement or buried restoration facilities at restored landfills. These gave rise to problems that works could not commence or the works design had to be revised after issue of tenders or during the construction stage, causing increases in costs and delay in works completion. In this regard, Audit has made recommendations accordingly.

PART 4 of the Report examines the EPD's monitoring of non-governmental bodies' afteruse facilities at restored landfills.

Audit noted that, with delegated authority from the Lands Department, the EPD granted land licences to 5 non-governmental bodies to develop and operate recreational facilities at restored landfills. Audit found that, as of December 2017, two licensees had not completed the development of facilities, with delays of 6 and 15 months respectively. In this connection, Audit has recommended that the EPD should keep under review the development progress of afteruse facilities. In addition, in view of the diversified nature of afteruse facilities, the expertise and capacity of the EPD to ensure licensees' compliance with licence conditions (e.g. the requirement to operate a high-quality facility) is inadequate. Therefore, Audit has recommended that the EPD should seek the assistance and support of the relevant bureaux and departments (e.g. the Home Affairs Bureau and the LCSD) in monitoring whether the licence conditions are complied with.

In his Policy Address of January 2014, the Chief Executive announced that the Government had earmarked \$1 billion to launch the Restored Landfill Revitalisation Funding Scheme (Funding Scheme) to provide funding for developing recreational, environmental or other community facilities on restored landfill sites. According to the EPD, the Funding Scheme covers 7 restored landfills with applications to be invited in three batches. However, as of December 2017, no in-principle approval had

been granted to Batch 1 applicants (giving rise to a delay of 28 months when compared with the original action timetable) and applications under Batches 2 and 3 had not been invited. In this connection, Audit has recommended that the Environment Bureau and the EPD should make additional efforts in implementing the Funding Scheme with a view to expediting the development of gainful use at restored landfills so that the community can benefit from them at the earliest opportunity.

Our views and recommendations were agreed by the relevant bureaux and departments. I would like to take this opportunity to acknowledge with gratitude the full cooperation, assistance and positive response of their staff during the course of the audit review.

Thank you, Mr. Chairman.

**Report No. 70 of the Director of Audit  
Chapter 1: Management of Restored Landfills  
Public Accounts Committee (Public Hearing)  
14 May 2018**

**Opening Speech by the Secretary for the Environment**

Chairman,

Introduction

With regard to the investigation conducted by the Legislative Council Public Accounts Committee and the Audit Commission on the management of restored landfills, we generally accept the recommendations of the Audit Commission and believe that this public hearing will help different sectors of the community to have a better understanding of the difficulties and challenges encountered in the management of restored landfills as well as their development after restoration. This will help us further improve the management of restored landfills.

2. First of all, I would like to briefly introduce the Government's work on the management of restored landfills:

A brief introduction of restored landfills

3. There are currently 13 restored landfills in Hong Kong. Formerly used as waste disposal facilities, restored landfills are of a special nature and substantially different from ordinary land pieces as restored landfills consist of numerous waste slopes and are subject to continuous ground settlement. Therefore, the development of afteruse projects in restored landfills has to overcome very challenging constraints and technical difficulties, such as restrictions on ground loading in the landfills and protection of aftercare facilities etc. Also, technical risk management including risk assessments on slope, natural terrain and landfill gas hazards is necessary to ensure that a few suitable land pieces in restored landfills will be made available for beneficial uses without affecting the aftercare work.



4. Over the years, the Environment Bureau (ENB) and Environmental Protection Department (EPD) have been endeavouring to develop these restored landfills into various recreational facilities, such as recreational ground, sports facility and park, etc. Currently, there are 16 projects of different uses having completed development or under planning for construction. These projects represent about 35% of the total area of restored landfills (i.e. about 112.6 hectares), and a predominant portion of the remaining land (about 90%) is slopes formed by landfilled solid waste or has been designated for specific use, such as Tsing Shan Firing Range, sites of special scientific interest and MTR sites, and used as restoration facilities and access roads for the landfills, etc. Trees have been planted for slope stabilisation and landscaping on slopes which could hardly be used for other development purposes. We estimate that there are now a total of about 12.9 hectares of remaining land which is an easier part to develop (i.e. flat ground and platform, etc., representing about 6% of the remaining land or about 4% of the total area of restored landfills) and yet to be designated for specific use. We launched Batch 1 of the Restored Landfill Revitalisation Funding Scheme in 2015, under which interested non-profit-making organisations or sports associations may apply for funding to develop four sites with an area of a total of 8.4 hectares in three restored landfills into recreational facilities or for other innovative use. Of these, 3.5 hectares of land will be developed by two non-profit-making organisations later. We will continue to proactively identify suitable uses for the remaining 9.4 hectares of land (i.e. representing about 2.9% of the total area of restored landfills) in conjunction with other relevant departments and consult the community.

5. I would like to make the following initial response to the contents of the Audit Report:

#### Government's work on the aftercare of restored landfills

6. The ENB and EPD attach great importance to the management and supervision of contractors of the facilities under their purview. The EPD conducted a comprehensive review of the monitoring system for waste treatment facilities in 2016. A number of improvement measures including increasing irregular inspections, enhancing training for EPD staff stationed at waste treatment facilities and installing more monitoring equipment were introduced subsequently. We will actively implement the recommendations made in the Audit Report and further strengthen the monitoring and management of restored landfills and the respective contractors.

### Development of recreational facilities or other afteruse facilities in restored landfills

7. I have just mentioned that various development constraints and technical difficulties must be overcome before afteruse projects may be developed in restored landfills. As recommended in the Audit Report, when developing government recreational facilities in restored landfills in future, the EPD will continue to work closely with relevant government departments to provide professional advice, assist in overcoming various constraints and difficulties, and avoid any possible conflict arising from interfacing of existing restoration facilities.

8. Meanwhile, we also strive to encourage non-governmental organisations to put restored landfills to various beneficial uses on a self-financing basis. These include the temporary golf driving range opened at the restored Shuen Wan Landfill, the temporary shooting range at the restored Pillar Point Valley Landfill, the international bicycle motocross park opened and the temporary cricket grounds under construction at the restored Gin Drinkers Bay Landfill, and the football training centre to be opened at the restored Tseung Kwan O Stage 1 Landfill.

9. Moreover, I would like to point out that currently all the licensees of the land licences granted for the development and operation of the above five afteruse projects develop and operate the projects on a self-financing basis, without requiring funding provided by the Government, to better utilise the land resources of restored landfills. Our priority is to ensure that these licensees can continue to carry out construction works of the afteruse facilities or maintain the normal operation of the relevant facilities for the general public or users. The inclusion of overly stringent licensing conditions is likely to discourage the existing licensees from continuing to provide such facilities. Nonetheless, we will collaborate with the relevant bureaux and departments to study the implementation of the recommendations on stepping up monitoring of land licence conditions in the Audit Report.

### Restored Landfill Revitalisation Funding Scheme

10. In implementing the Restored Landfill Revitalisation Funding Scheme, we hope to gain recognition from and share the outcomes with the community, in addition to achieving the objective of better utilising the land resources of restored landfills. Therefore, we enhanced the consultation with the relevant District Councils during the process. Despite a longer time required for the Scheme, we consider such consultation and discussion necessary as the Government can have a thorough

understanding of the opinions of the relevant District Councils and residents before making decisions. We will continue to actively take forward the revitalisation projects under the Funding Scheme, and invite applications from the relevant organisations for the use of the remaining restored landfills.

### Conclusion

11. Looking ahead, we will actively follow up on the implementation of various recommendations in the Audit Report, so as to further enhance our work on the restored landfills.

**[Besides, we understand that the public wish to know more about the land uses of the restored landfills. Hence, President, I would like to invite my colleague, Ms. Cheung Miu-han, Betty, the Assistant Director of Environmental Protection, to briefly introduce the land use situation of the 13 restored landfills with the aid of slides to help you all better understand the difficulties and challenges encountered in the development of afteruses.]**

本署檔案  
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**Environmental Protection Department  
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政府總部東翼 16 樓

**By Email and Fax**

Public Accounts Committee  
Legislative Council Secretariat  
Legislative Council Complex  
1 Legislative Council Road  
Central, Hong Kong  
(Attn: Mr. Anthony CHU)

25 May 2018

Dear Sir,

**Public Accounts Committee**  
**Consideration of Chapter 1 of the Director of Audit's Report No.70**  
**Management of Restored Landfills**

Thank you for your letter dated 15 May 2018. Please find in the enclosed appendix the information requested. If you need any further information, please contact the undersigned.

Yours faithfully,

(FONG Kin-wa)

for Director of Environmental Protection

Encl.

c.c. Secretary for Environment (fax no. 2537 7278)  
Secretary for Home Affairs (fax no. 2591 5536)  
Director of Leisure and Cultural Services (fax no. 2691 4661)  
Director of Architectural Services (fax no. 2810 7341)  
Director of Home Affairs (fax no. 2574 8638)  
PEO(G), FSTB(TsyB) (Mike WM CHENG/TSYB/HKSARG)  
Director of Audit (fax no. 2583 9063)

## Appendix - EPD's response to PAC's request for information

Q(a)	whether the Environmental Protection Department ("EPD") has any plan to allocate more land for other uses if aftercare of a landfill had been conducted for 30 years;
	<p>The Government has been striving to develop, where appropriate and feasible, the land in restored landfills for beneficial use in order to better utilize the land resources and satisfy the community's need. The landfill restoration contracts have specified an aftercare work period of 30 years. Without prejudice to the aftercare work and protection of public safety, the Environmental Protection Department (EPD) will continue to allocate the land for other uses as appropriate during the aftercare period in consultation with the relevant district councils and stakeholders. The EPD will conduct regularly environmental review to examine the progress and effectiveness of the aftercare works. Moreover, nearer the end of the aftercare period, the EPD will examine in detail to see if the aftercare work still needs to continue. If no longer necessary, we would remove the restoration facilities (e.g. leachate treatment plants or site offices) and examine the feasibility of releasing such residual small areas which have once been occupied by the facilities for other appropriate uses and consult the relevant district councils and stakeholders.</p>
Q(b)(i)	<p>please list out the commonalities and differences on the requirements for compliance by contractors in terms of environmental parameters, such as flow rate of the discharge, total nitrogen level of leachate discharge, landfill gas emission limits etc. as set out in the following documents:</p> <ul style="list-style-type: none"> <li>● statutory requirements under the Water Pollution Control Ordinance (Cap. 358) ("WPCO") (the Technical Memorandum or any other requirements);</li> <li>● license(s) issued by Director of Environmental Protection to the contractors under WPCO; and</li> <li>● landfill restoration contracts;</li> </ul> <p>and provide a copy of the Technical Memorandum and information as required in the table in the Appendix;</p>
	<p>The requirements in the licenses issued under the Water Pollution Control Ordinance (WPCO)(Cap. 358), the Technical Memorandum (TM) and the Contractor's obligations under the landfill restoration contracts are set out in the enclosed <b>Annex 1</b> for reference. A copy of the TM is enclosed in <b>Annex 2</b> for reference.</p>
Q(b)(ii)	<p>Director of Environmental Protection stated at the public hearing that contract requirements were more stringent than the statutory requirements stipulated under WPCO. Please provide a comparison between contract requirements and WPCO requirements demonstrating that a stricter control was imposed under the landfill restoration contracts;</p>
	<p>The requirements under the landfill restoration contract (contract) are more stringent than the statutory requirements stipulated under the WPCO and cover a wider range. Apart from complying with the discharge standards and requirements stipulated under the WPCO, the</p>

**\*Note by Clerk, PAC:**    *Annex 2 not attached.*

	<p>contract has also specified additional non-statutory requirements (e.g. on operating temperature of the landfill gas flaring plant and surface water discharge). Under the contract, there are different levels of environmental performance indicators that require the Contractor to set stricter or additional trigger limits and action limits that are not required in the environmental legislation. From project management and supervisory points of view, specifying such requirements under the contract would allow the Contractor to discover problems early and take proactive actions and implement mitigation measures so as to avoid causing environmental pollution and/or breaching the law. Furthermore, in case of any non-compliance with the contract requirements, the Contractor will not only be penalized by way of deduction of operation payment but also required to increase the monitoring frequency until the contractual requirements are complied with. Related information is enclosed in <b>Annex 3</b> <u>for LegCo PAC's internal reference</u>.</p>
Q(b)(iii)	<p>is a breach of license conditions equivalent to a breach of relevant requirements under WPCO? If yes, is the penalty imposed the same? If not, reasons for the difference;</p>
	<p>The Water Pollution Control Ordinance (WPCO) (Cap. 358) provides general controls on the discharge of polluting matters in waters of Hong Kong by any person. These controls aim to broadly cover offences of all kinds and those without specific discharge routes. The Water Pollution Control (General) Regulations (WPC(G)R) provides more specific controls* on WPCO licencees (generally involving facilities with regular discharges such as wastewater treatment plants and restaurants). Any discharge of effluent in breach of the terms and conditions specified in the licence is an offence liable to prosecution, irrespective of whether the discharge involves polluting matters or not<sup>#</sup>. The WPCO has different provisions for controlling discharges under different circumstances. Breach of licence terms and conditions would be prosecuted under WPC(G)R. The maximum penalties of these offences under WPCO and WPC(G)R are different with details as follows:</p> <p>Maximum penalty:</p> <p><b>WPCO</b></p> <p>(1) For discharges of any waste or polluting matter:</p> <p>6 months imprisonment and</p> <ul style="list-style-type: none"> <li>● for a first offence, a fine of \$200,000</li> <li>● for a second or subsequent offence, a fine of \$400,000</li> <li>● in addition, if the offence is a continuing offence, a fine of \$10,000 for each day</li> </ul> <p>(2) For discharges of poisonous or noxious matter:</p> <ul style="list-style-type: none"> <li>● for a first offence, a fine of \$400,000 and imprisonment for 1 year</li> <li>● for a second or subsequent offence, a fine of \$1 million and imprisonment for 2 years</li> <li>● in addition, if the offence is a continuing offence, a fine of \$40,000 for each day</li> </ul>

**\*Note by Clerk, PAC:** *Annex 3 not attached.*

	<p><b>WPC(G)R</b></p> <p>(3) For contravention of the conditions of a licence:</p> <ul style="list-style-type: none"> <li>● a fine of \$200,000 and imprisonment for 6 months</li> </ul> <p>* e.g. requirements on flow rate, treatment facilities, discharge point(s), sampling points(s), monitoring, records and reporting</p> <p># e.g. failing to submit monitoring reports or to keep monitoring records is an offence</p>
Q(b)(iv)	if a breach has resulted in a fine for the offence under the license/WPCO, whether EPD would still pursue civil remedies under the contract, including the deduction of points and/or deduction of payments; and
	<p>The Environmental Infrastructure Division (EID) of the EPD is responsible for monitoring the operational performance of the Contractor while the Environmental Compliance Division (ECD) of the EPD is responsible for enforcing relevant environmental legislation. Due to the difference in the scope and nature of the work of the two divisions, with the enforcement officers acting independently, the two divisions will take leachate samples separately and at irregular time (not necessarily be at the same time). If the Contractor has been found violating both the contractual and statutory requirements, when the two divisions took samples at the same time, both divisions under the EPD will take strict actions under the contract and the relevant ordinance accordingly. There is no contractual clause in the current landfill restoration contract which stipulates that the Contractor's conviction results can be used as evidence for deducting points under the point system and hence the operational payment. The EPD therefore has no basis under the contract and cannot use such conviction results for deducting points or payment. Any amendment to the current contract requires mutual agreement between the EPD and the Contractor and any unilateral decision may lead to potential litigation. Nevertheless, the EPD agrees to consider, before awarding future contracts, reviewing introducing such mechanism with relevant government tendering boards. However, before making such decision, the EPD will also need to consider the possible impact, for example, whether it is consistent with the contractual mechanisms of other government bureau and departments.</p> <p>In addition, both the Contractor's non-compliance with contractual requirements and convictions will be reflected in his performance reports prepared by the EPD. Such performance assessment will directly affect the Contractor's grading when bidding new government contracts (i.e. not limited to new contracts under the EPD) and the opportunities for future appointments. These mechanisms/arrangements are similar to other government departments practice with their outsourced service contractors.</p>
Q(b)(v)	according to paragraph 2.12 there is a demerit point system for the deduction of monthly payments for Contract A3, details of this system;

	<p>The “demerit point” system stated in paragraph 2.12 of the Audit Report is only for calculating the payment deduction due to non-compliances with contractual requirements, not for assessment in the Contractor’s performance report. The EPD’s five landfill restoration contracts all include a deducting point system which specifies the number of points and the maximum points to be deducted in a month for each specified non-compliance with the environmental and pollution control requirement. Taking the Pillar Point Valley Landfill contract as an example, if the total nitrogen level of leachate discharge sample exceeds the specified limit, 1 point would be deducted and the maximum number of points to be deducted for various non-compliances in a month is 35. Related information is enclosed in <b>Annex 4</b> for <u>LegCo PAC’s internal reference</u> (English version only).</p>
Q(c)	<p>the tender procedures for the five landfill restoration contracts (Table 2 in paragraph of 2.3 of the Audit Report refers), including the number of companies which had been invited for submission of tender proposals for each of the five contracts and the number of tender proposals received. Whether references had been made to overseas experience when drawing up the tender documents. If yes, details of these references;</p>
	<p>The tender procedures, number of invited prequalified tenderers and tenders received; and overseas reference of the five landfill restoration contracts are enclosed in <b>Annex 5</b> for <u>LegCo PAC’s internal reference</u>.</p>
Q(d)	<p>(d) reasons for EPD to adopt a design-build-operate form of contract for the restoration and management of the 13 landfills which lasts for 30 years. Even though the contracts include a termination clause, whether such a form of long-term contract might impose restrictions to terminate a contractor for consistent poor standard of performance because of the difficulty to invite another contractor to run the restoration facilities designed by the original contractor, thus hinder the effectiveness of the contract termination clause as the last resort? Please provide an extract of the contract termination clause for the Contract A3 as an illustration.</p>
	<p>Since the 80s, the EPD had adopted the design-build-operate (DBO) form of contract for the development and management of its waste facilities, employing via open tendering specialist Contractors for the restoration of the closed landfills and their aftercare work for a period of 30 years.</p> <p>Requirements on the performance of the waste facilities and their relevant environmental parameters (such as waste handling capacity, odour control, wastewater discharge and air emission standards, etc.) are stipulated in the DBO contract. To this end, a specialized Contractor has to choose the most appropriate design and operational mode to meet the contractual requirements. This has not only allowed bringing in the best available professional knowledge and technologies, but also ensured that the specialist Contractor who is responsible for the design and construction would continue to fulfill his contractual obligations in operating the waste facilities throughout the entire contract period. In addition, the contract also requires the specialist Contractor to submit his detailed designs, as-built drawings, operation procedures and reports for approval and record-keeping by the independent consultant and EPD.</p>

**\*Note by Clerk, PAC:** *Annexes 4 and 5 not attached.*



Our landfill restoration contracts stipulate that the Government has the right to terminate the contracts anytime by giving the Contractor 9 months or 12 months advance notice in writing (i.e. depending on the relevant clauses of various contracts). For the PPVL contract, a 9-month advance notice in writing is required to terminate the contract. The relevant clause is extracted and enclosed in **Annex 6** for LegCo PAC's internal reference (English version only).

When deciding whether to terminate early the contract, besides making reference to the contract, the Government also needs to take into account a host of factors including but not limited to whether the non-compliances with contractual requirements/ statutory requirements involve any systemic fault of the Contractor; the Contractor's performance in meeting the contractual requirements; whether the Contractor has promptly taken responsible and appropriate follow-up actions upon receipt of our warning; whether the Contractor has intentionally created loopholes/committed non-compliances with the contractual and statutory requirements so as to indirectly avoid his legal and contractual obligations; the potential risks associated with litigation and contractual claims made by the Contractor; implications of early contract termination of the contract on the community in relation to environmental and waste management; and how to ensure there are other companies with suitable professional background and qualifications to participate in the re-tendering, etc.

For the PPVL contract, upon carefully examining the non-compliance cases, we consider that although the Contractor is at fault, there has been no systemic problem in his operational management. The Contractor has also continuously taken various follow-up and remedial actions and there has been progressive improvement in his operational management of the PPVL. Taking into account of the above and after consulting legal advice, we consider early contract termination is not the best way to safeguard public interest.

There are various contract arrangements for project developments, including DBO. The DBO concept is that the Government will pay for the construction cost while the private company (i.e. the Contractor) carry out design and construction works for the facilities in accordance with the requirements set out by the Government. Upon completion of the works, the Contractor then operates the facilities in accordance with the contractual operational requirements. All along, for projects that are unique in nature and require commitment of specialized technologies and equipment (such as restored landfill projects), the EPD considers that the DBO form of contract should be adopted, with the same Contractor responsible for the design, construction and operation of the facilities. So far, the EPD's waste facilities awarded under DBO contract, have been operating smoothly in general. As for PPVL, upon our review of all other landfill restoration contracts, we consider that the PPVL incident is an isolated case, in which the Contractor has failed to meet the contractual and statutory requirements in leachate treatment and monitoring.

As it takes a long time, up to 30 years or above, to carry out landfill restoration and aftercare work, we consider that adopting the DBO contract arrangement can effectively enable a single contractor to design and construct suitable restoration facilities and continue to carry out works accordingly. All in all, this can ensure that the contractor will continuously carry

**\*Note by Clerk, PAC:** *Annex 6 not attached.*

	<p>out and be responsible for the aftercare work throughout the entire aftercare period.</p> <p>Also, to reduce risks when tendering for landfill restoration project, EPD will award the contracts to the most suitable candidate. In this regard, EPD will make reference to the tenderer's past experience, financial capability, technical knowledge etc. during the prequalification and tendering exercises.</p>
Q(e)	<p>(e) an extract of the relevant sections of the tender documents for Pillar Point Valley Landfill ("PPVL") providing information including tender requirements and specifications, relevant experiences/expertise required of the applicants, criteria in evaluating tenders;</p>
	<p>The tender documents of PPVL is enclosed in <b>Annex 7</b> for <u>PAC's internal reference</u> (English version only).</p>
Q(f)	<p>(f) according to Note 15 of paragraph 2.7, a review was conducted after five years of commissioning the aftercare work and the first environmental review for PPVL was completed in 2011. Please provide details of the first review, such as when the review started and ended and issues covered under the review. Why did the second review commence in 2017 (instead of 2016) after a lapse of six years after the completion of the first review;</p>
	<p>The main objective of conducting environmental review is to understand the progress of the aftercare works and the environmental conditions of the restored landfill. In brief, a restored landfill is deemed to be fully restored and aftercare needs not continue when the following conditions are satisfied:</p> <ul style="list-style-type: none"> <li>(i) the untreated landfill gas has a methane content of less than 1% by volume; and</li> <li>(ii) the quality of untreated leachate meets the relevant standards before discharging to the government sewers.</li> </ul> <p>The first Environmental Review for PPVL commenced in early 2011 and completed in April 2011. During the review, we gathered the past environmental monitoring data of the restored landfill (from July 2006 to December 2011) including:</p> <ul style="list-style-type: none"> <li>(i) quantity of landfill gas collected and concentrations of the parameters (e.g. methane and carbon dioxide);</li> <li>(ii) quantity of leachate collected and concentrations of the parameters (e.g. biological oxygen demand, chemical oxygen demand and ammonia nitrogen);</li> <li>(iii) groundwater elevation; and</li> <li>(iv) records of settlement for the various points within the landfill.</li> </ul> <p>The first Environmental Review report is enclosed in <b>Annex 8</b> for <u>LegCo PAC's internal reference</u> (English version only):</p> <p>For the PPVL's second Environmental Review (which is supposed to commence in the first half of 2016), in view of the 9-month overhaul and shutdown period for the leachate treatment plant from May 2016 to January 2017, related water quality monitoring was</p>

**\*Note by Clerk, PAC:** *Annexes 7 and 8 not attached.*

	rescheduled to early 2017. Also, due to the prolonged heavy rainfall in 2017, significant amount of leachate was generated on site, which hindered the operation of the leachate treatment plant, the Contractor had to continue with follow-up remedial works. Irrespective of whether the second Environmental Review was conducted as scheduled, the aftercare works would have to be continued. We consider it more appropriate to conduct the second Environmental Review; and collect and collate all relevant data from 2011 to 2018 (including the leachate generated in 2018 wet season) only after the maintenance works are completed and the leachate treatment plant resumes normal operation, so as to comprehensively and effectively review the environmental conditions of PPVL. We expect to complete the concerned Environmental Review by end of 2018.
Q(g)	regarding the long period of non-compliances with statutory and contractual requirements at PPVL and the conduct of review as stated in paragraphs 2.9 to 2.15, please provide the following information:
Q(g)(i)	A chronology of events prior to and after the receipt of complaints, including discovery of non-compliances (before and after receiving the complaints), reviews and investigations made, initiation of prosecutions, imposition of fines by the court, deduction of points/payments made to the contractor, and monitoring/follow-up/remedial actions taken by EPD;
	Key events of Contractor's non-compliances with statutory and contractual requirements at PPVL is enclosed in <b>Annex 9</b> for <u>LegCo PAC's internal reference</u> .
Q(g)(ii)	a copy of the complaint letters received by EPD;
	Records of complaints received are enclosed in <b>Annex 10</b> for <u>LegCo PAC's internal reference</u> (English version only).
Q(g)(iii)	a copy of Investigation Report as mentioned in paragraph 2.9 and the 2016 EPD Review Report mentioned in paragraph 2.20;
	The Investigation Report and 2016 EPD Review Report are enclosed in <b>Annex 11 &amp; 12</b> for reference. (English version only). ( <b>Annex 12</b> is for <u>LegCo PAC's internal reference</u> only)
Q(g)(iv)	How would EPD verify that the performance of the contractor complied with the contractual requirements? A sample of the aftercare monthly statement submitted by the contractor (which provides information including monitoring data on leachate discharge, landfill gas and ground settlement);
	All restored landfill contracts require relevant Contractors to carry out specific environmental monitoring and take environmental samples regularly (including treated leachate, groundwater and river water near landfills) for testing by independent qualified laboratories. The testing reports will be submitted to EPD for review to prove that the landfill operation

**\*Note by Clerk, PAC:** *Annexes 9, 10 and 12 not attached.*

	<p>(including the leachate treatment and discharge) complies with the contractual requirements. As the Contractor's Aftercare monthly report for April 2018 can provide more comprehensive monitoring data while monitoring for ground settlement will only be carried out once every November, two Contractor's Aftercare Monthly reports (Apr 2018 and Nov 2017) are attached in <b>Annexes 13 and 14</b> for <u>LegCo PAC's internal reference</u> (English version only).</p> <p>The EPD staff will also conduct regular inspection and complete the daily operation checklists for cross-checking the monitoring results reported in the Contractor's aftercare monthly reports (which provide information including monitoring data on leachate discharge, landfill gas and ground settlement). In case the EPD staff identify any non-compliance or abnormalities in the Contractor's aftercare monthly reports, the EPD staff will follow up swiftly with the Contractor and handle the issue in strict accordance with the contractual requirements.</p> <p>Besides, after completing the review in 2016, EPD has accordingly implemented a number of improvement measures to strengthen site supervision of the Contractors in the restored landfills, including installation of advanced equipment in PPVL and other restored landfills with leachate treatment plant, landfill gas flare plant and utilisation plant; conducting surprise checks on weekdays and weekends; adopting random inspection mode; and identifying new sampling points of leachate discharge, etc. Installation of advanced equipment, which includes upgrading data logging systems, can provide real-time monitoring of the operating data of leachate treatment plants, landfill gas flare plants and utilisation plants, obviating the need for cross-checking Contractors' site records (e.g. daily log sheets) with aftercare monthly reports.</p>
Q(g)(v)	<p>according to paragraph 2.15, on-site monitoring based on regular sampling and daily visual inspections and manual checking of contractors' operating data were conducted prior to the 2016 EPD Review arising from the complaints received. Please provide guidelines on how such sampling and inspections were to be conducted; sample records showing data collected by EPD on-site staff; and reasons why contractor's non-compliances were not detected by on-site staff prior to the complaints received;</p>
	<p>Prior to the 2016 EPD review, we had been monitoring the Contractors' compliance with the contractual requirements mainly through the following means:</p> <ul style="list-style-type: none"> <li>(i) carrying out regular inspections and completing the daily operation checklists by site staff for cross-checking the monitoring results reported in the Contractors' aftercare monthly reports (which provide information including monitoring data on leachate discharge, landfill gas and ground settlement); and</li> <li>(ii) reviewing the aftercare monthly reports submitted by Contractors.</li> </ul> <p>The operation manual and a sample daily operation checklist before the 2016 EPD Review</p>

**\*Note by Clerk, PAC:** *Annexes 13 and 14 not attached.*

	<p>are enclosed in <b>Annex 15 and Annex 16</b> respectively for <u>LegCo PAC's internal reference</u> (English version only). We have updated the operation manual and daily operation checklists after the 2016 EPD Review and they are enclosed in <b>Annex 17 and 18</b> <u>LegCo PAC's internal reference</u> (English version only). The major improvements are stated in paragraphs 5.8.1 and 5.8.8 in <b>Annex 17</b>. Furthermore, subsequent to the 2016 EPD Review, advanced equipment is being progressively installed at PPVL and other restored landfills installed with leachate treatment plants and landfill gas flaring plants; daily and weekend surprise checks are conducted; irregular inspection patterns are adopted; and new sampling points for leachate discharge have been identified.</p> <p>Our daily operation inspection records did not reveal any Contractor's non-compliance prior to the complaint received in January 2016. Under the PPVL contract, there is no requirement for the Contractor to keep the data record of flare temperature of the landfill gas flare plant/utilization plant and submit it to EPD. After we received the complaint in January 2016, we had requested the Contractor to provide daily log sheets covering 973 days from January 2013 to August 2015 for checking. However, the Contractor later informed us that daily log sheets for 299 days were found missing and 1 daily log sheet was found undated. We could not take further actions as failure to provide data record of the flare temperature of the landfill gas flare plant/utilization plant was not a breach of contractual or statutory requirements. In light of the incident, we had reviewed comprehensively the mechanism of monitoring the Contractor's performance and recommended a number of improvement measures, including the installation of real-time data logging system as to monitor and record the operational conditions of the leachate treatment plant, flare temperature of landfill gas combustion, heat exchanger temperatures, etc. in order to enhance the checking of the Contractor's monthly reports and the operational performance of the facilities.</p>
Q(g)(vi)	the number and ranks of on-site staff deployed to PPVL and whether they were stationed at PPVL on a full-time basis, their daily duty list, frequency of conducting water sampling test, and mechanism for handling irregularities. In this connection, the number of on-site staff for the other 12 landfills;
	<p>Currently, the work of our staff at the 13 restored landfills include:</p> <ul style="list-style-type: none"> <li>(i) monitoring of aftercare works (including tree management, security, etc.) and afteruse developments (e.g. temporary shooting range, football training centre, etc.);</li> <li>(ii) regular environmental monitoring (e.g. around 28 times of water sampling at PPVL in each month, including leachate, surface water and groundwater);</li> <li>(iii) provision of technical support and frontline management for the facilities and contract;</li> <li>(iv) handling complaint and enquiry cases; and</li> <li>(v) undertaking irregular surprise checks at the 13 restored landfills during nighttime and public holidays.</li> </ul>

**\*Note by Clerk, PAC:** *Annexes 15 to 18 not attached.*

	<p>To handle abnormal cases, our guideline specifies that the environmental performance of the Contractors shall be inspected and monitored by our site staff. The Contractors are required to carry out samplings and testing of the specified environmental parameters and submit the testing results to us on a monthly basis under contract. We will review the monthly environmental reports and check against the site inspection results submitted by our site staff. If there are non-compliances and/or abnormalities, our site staff shall report to the officer as soon as practicable for follow-up. If any non-compliance of environmental performance is identified, the officer shall promptly request the Contractors to investigate the cause, rectify the situation and increase the monitoring frequency as appropriate.</p>																			
	<p>In view of the relatively low environmental risk and considering the effective use of manpower resources, we have adopted the following arrangements:</p> <table border="1"> <thead> <tr> <th>Contract</th><th>Restored landfills</th><th>EPD staff*</th></tr> </thead> <tbody> <tr> <td>Contract A1</td><td>Tseung Kwan O Stage 1 ^ Tseung Kwan O Stage 2/3 #^ (with office for EPD staff)</td><td>1 Senior Environmental Protection Inspector (SEPI), 2 Environmental Protection Inspectors (EPIs)</td></tr> <tr> <td>Contract A2</td><td>Gin Drinkers Bay #^ (with office for EPD staff and EPD staff will need to travel from this office to other districts to carry out the routine works for Contract A2), Ma Tso Lung Siu Lang Shui Ngau Tam Mei</td><td>1 SEPI, 2 EPIs</td></tr> <tr> <td>Contract A3</td><td>Pillar Point Valley #^ (with office for EPD staff)</td><td>1 SEPI, 1 EPI</td></tr> <tr> <td>Contract B1</td><td>Shuen Wan ^ (with office for EPD staff)</td><td>1 SEPI, 2 EPIs</td></tr> <tr> <td>Contract B2</td><td>Ma Yau Tong Central #^ (with office for EPD staff and EPD staff will need to travel from this office to other districts to carry out the routine works for Contract B2) Ma Yau Tong West Jordan Valley ^ Ngau Chi Wan Sai Tso Wan ^</td><td>1 SEPI, 3 EPIs</td></tr> </tbody> </table> <p># with leachate treatment plant operating continuously ^ with landfill gas flaring plant * We employed a contract staff in April 2017 to organize and oversee surprise checks in all the restored landfills.</p>		Contract	Restored landfills	EPD staff*	Contract A1	Tseung Kwan O Stage 1 ^ Tseung Kwan O Stage 2/3 #^ (with office for EPD staff)	1 Senior Environmental Protection Inspector (SEPI), 2 Environmental Protection Inspectors (EPIs)	Contract A2	Gin Drinkers Bay #^ (with office for EPD staff and EPD staff will need to travel from this office to other districts to carry out the routine works for Contract A2), Ma Tso Lung Siu Lang Shui Ngau Tam Mei	1 SEPI, 2 EPIs	Contract A3	Pillar Point Valley #^ (with office for EPD staff)	1 SEPI, 1 EPI	Contract B1	Shuen Wan ^ (with office for EPD staff)	1 SEPI, 2 EPIs	Contract B2	Ma Yau Tong Central #^ (with office for EPD staff and EPD staff will need to travel from this office to other districts to carry out the routine works for Contract B2) Ma Yau Tong West Jordan Valley ^ Ngau Chi Wan Sai Tso Wan ^	1 SEPI, 3 EPIs
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Q(g)(vii)	as landfill operates round-the-clock, reasons for not conducting round-the-clock monitoring but only during office hours prior to the 2016 EPD Review;
	<p>We have been closely monitoring the restored landfills and carrying out regular environmental monitoring throughout the aftercare period. All our past environmental monitoring results had showed that they complied with the contractual and relevant statutory requirements, showing that the restored landfills were operating normally. When we allocate manpower resources to manage the various tasks at the restored landfills, we have taken into consideration their relatively low environmental risk and the effective use of manpower resources.</p> <p>After the PPVL incident, we had thoroughly reviewed in 2016 the performance of Contractors at all restored landfills and did not identify any similar case. We believe that the Contractor's malpractices of operating the PPVL leading to statutory and contractual non-compliances is an isolated incident. Nonetheless, we have attached great importance to the management and supervision of the facilities' Contractors and thoroughly reviewed our waste facilities monitoring system in 2016, including implementing improvement measures to strengthen the management and supervision of restored landfills by stepping up the frequency of irregular inspections; enhancing training for on-site staff; and installing real-time data logging system etc., so as to improve the existing monitoring system and its efficiency.</p>
Q(g)(viii)	according to statements made by Assistant Director (Environmental Infrastructure), EPD at the public hearing, prior to the 2016 EPD review, sampling points for collecting leachate discharge for testing as stipulated in the tender documents include effluents discharged from nearby settlements (such as offices). Please provide an extract of the contract stipulating the locations of the sampling points and the justifications for specifying such locations which would affect the accuracy of the sampling tests to show whether substandard leachate or untreated leachate had been discharged. Whether such choice of sampling points are stipulated in all five landfill restoration contracts;
	<p>Like all the other restored landfills, the PPVL contract was awarded in the form of Design-Build-Operate through open tendering. When the contract was awarded, the location of leachate sampling point was not specified as the design proposal of the leachate treatment plant had yet to be finalised. At a later stage, the sampling location was designated at the terminal foul water manhole of the site (i.e. the last discharge point prior to entering to the public foul sewer), where the treated leachate (taking up more than 99.5% of the total discharge) was mixed with sewage from the site office (taking up less than 0.5% of the total discharge). In the 2016 EPD Review, it was concluded that although the effluent in the sampling point could reflect the quality of effluent discharge into the public sewer, it might not reflect accurately the quality of treated leachate discharge from the leachate treatment plant. Hence, after the Review, the EPD proactively changed the sampling point, the related improvement measures are listed in <b>Annex 11</b> para. 7.4, so as to ensure further that the</p>

	treated leachate discharge be in compliance with both licence and contract requirements; and at the same time, it also allows EPD to effectively monitor the performance of the leachate treatment plant. Please refer to <b>Annex 19</b> for detailed location of sampling point at PPVL ( <u>for LegCo PAC's internal reference</u> ).
Q(g)(ix)	as the concentration of the discharge ( total nitrogen level etc.) is one of the key monitoring aspect of compliance with license conditions/WPCO, how could EPD effectively perform its monitoring duty if the sampling test results might be inaccurate as revealed in (viii) above?
	As stated in our response in (g)(viii) above, our EPD 2016 Review concluded that the location of sampling point at the terminal manhole might not reflect very accurately the quality of the treated leachate discharge from the leachate treatment plant. Hence, the EPD proactively relocated the sampling point so as to ensure the treated leachate discharge in compliance with both licence and contract requirements and at the same time, it also allows the EPD to effectively monitor the performance of the leachate treatment plant.
Q(g)(x)	improvement measures taken to enhance the monitoring of the performance of Contractor A, including the locations of the new sampling points and reasons for designating such locations;
	Please refer to our response in (g)(v) and (g)(viii).
Q(h)	according to paragraphs 2.18 and 2.19, site records (e.g. daily log sheets) shall be properly stored and be available for the EPD's inspection upon request but 299 daily log sheets on landfill gas flaring plant ("LGP") operating temperature were found missing from January 2013 to August 2015, which contravened contract requirements. Whether EPD has any guidelines for on-site staff to inspect the daily log sheets of Contractor A in order to verify the reliability and accuracy of the monthly statements submitted by the contractor. Why had the irregularities not been discovered by EPD on-site staff, the penalty, if any, imposed on the contractor in this regard and explanation given by the contractor on the missing log sheets. Please provide the correspondences between EPD and the contractor on this subject;
	Please refer to our response in (g)(v) on missing daily log sheets, not discovering problems earlier and our follow up improvement measures. In addition, the PPVL contract does not stipulate any penalty on missing daily log sheets. According to the Contractor, the majority of the dates with missing log sheets were either when the plant was not in operation; or when the plant was shut down for maintenance. Related follow up correspondences on missing daily log sheets are enclosed in <b>Annex 20</b> for <u>LegCo PAC's internal reference</u> (English version only).
Q(i)	further to (h) above, did EPD on-site staff maintain records of the readings for the 299 days for which the log sheets were missing? If not, how could EPD's on-site staff ensure accuracy of monthly report submitted by the contractors during the period?

**\*Note by Clerk, PAC:** *Annexes 19 and 20 not attached.*



	<p>During the 299 days for which the Contractor's daily log sheets were found missing, our site staff had conducted regular inspections and completed daily operation checklists (except on Saturdays, Sundays and public holidays) for cross-checking the Contractor's aftercare monthly reports. Our site staff did not find any irregularities or unusual records of combustion temperature during the period.</p>
Q(j)	<p>the latest installation progress of advanced equipment, especially on "reviewing and installing automatic sampling device/on-line analyzer" which was still in the stage of quotation exercise, and reasons for the delay as depicted in Table 3 of paragraph 2.21;</p>
	<p>As depicted in Table 3 of paragraph 2.21 of the Audit Report, we have completed the installation of surveillance cameras at restored landfills with both LTP and LGP (Since the LTP of the Jordan Valley Landfill adopts biological technology for leachate treatment, and the respective restoration contract does not stipulate the operation temperature requirement for the LTP, we consider that it is not necessary to install surveillance cameras at the Jordan Valley Landfill). As at 21 May 2018, the advanced equipment installation progress at the five restored landfills with both LTP and LGP is as follow:</p> <p>(1) Reviewing and upgrading data monitoring system:</p> <p>We have upgraded the data monitoring system at the PPVL and Jordan Valley Landfill (Since the LTP at the Ma Yau Tong Central Landfill operates in wet seasons only, it would not be economical to install data monitoring system. We consider that the installation of surveillance cameras would serve the purpose of strengthening the monitoring of the operating data). Regarding the two remaining ones, Tseung Kwan O Stage II/III Landfill and the Gin Drinkers Bay Landfill where data monitoring system has not yet been upgraded, the Contractor has arranged an overseas specialist to carry out on-site inspection in mid-May 2018, to review if such upgrading is compatible with the existing leachate treatment plants. It is anticipated that the results and study report will be submitted to the EPD on or before the 4<sup>th</sup> quarter of 2018, to determine whether the existing systems at the two landfills can be upgraded and, if affirmative, the expected upgrading time.</p> <p>(2) Reviewing and installing automatic sampling device/on-line analyzer:</p> <p>We have installed automatic sampling devices at the Jordan Valley Landfill and Ma Yau Tong Central Landfill. Moreover, the supplier has delivered the automatic sampling devices to the PPVL, Tseung Kwan O Stage II/III Landfill and Gin Drinkers Bay Landfill. Upon completing installation in late May this year tentatively, our on-site staff will carry out regular sampling to enhance the efficiency of water quality monitoring.</p> <p>Having conducted on-site trial, the reading of the on-line analyzer for measuring "ammonia nitrogen" was found unstable and inaccurate. The "ammonia nitrogen" data obtained from the analyzer deviated largely from the results provided from laboratory testing. The supplier of the analyzer reckoned that the operation of the respective</p>

	<p>equipment might be affected in confined space and under high temperature, therefore being unable to provide accurate measurement (the temperature of treated leachate from LTP is above 40°C in general).</p> <p>In light of the above, we consider that the current arrangement of delivering samples as collected from auto-sampling devices to laboratory for testing could more effectively monitor the operation of the LTPs.</p>
Q(k)	referring to paragraphs 4.24 to 4.29 regarding Restored Landfill Revitalization Funding Scheme ("the Funding Scheme"):
Q(k)(i)	justifications for implementing the Funding Scheme in three batches;
	<p>There are seven restored landfills available for development under the Restored Landfill Revitalisation Funding Scheme (RLRFS). The Steering Committee (SC) on RLRFS considered that the seven restored landfills available should be launched in batches so that the operating details of the RLRFS could be refined after taking account of the experience from the first batch. Subsequent to the site visits to the restored landfills and having considered various factors such as location of the restored landfills, the SC agreed to include Tseung Kwan O Stage I Landfill (TKOIL) in Sai Kung, Ma Yau Tong Central Landfill (MYTCL) in Kwun Tong and Pillar Point Valley Landfill (PPVL) in Tuen Mun under Batch 1 of RLRFS. Batch 2 of RLRFS includes the remaining four restored landfills namely, Tseung Kwan O Stage II/III Landfill (TKOL-II/III) in Sai Kung, Ma Yau Tong West Landfill (MYTWL) in Kwun Tong, Siu Lang Shui Landfill (SLSL) in Tuen Mun and Ngau Tam Mei Landfill (NTML) in Yuen Long. Batch 3 of RLRFS includes any restored landfills unallocated from Batches 1 and 2 of RLRFS.</p>
Q(k)(ii)	reasons for including only seven landfills in the three batches, but not all 13 landfills;
	<p>There are 13 restored landfills in Hong Kong. The Environment Bureau and the EPD have strived to develop these restored landfills into various recreational facilities. At the time the RLRFS was launched, six restored landfills had already been developed into various types of recreational facilities or planned for designated uses for most of the useable areas, such as:</p> <ul style="list-style-type: none"> <li>• Shuen Wan Landfill as a temporary golf driving range;</li> <li>• Sai Tso Wan Landfill as a recreation ground for football and baseball;</li> <li>• Gin Drinkers Bay Landfill as an international BMX Park, with the remaining part of the site as a temporary cricket grounds and reserved for the planned Kwai Chung Park development;</li> <li>• Jordan Valley Landfill as Jordan Valley Park;</li> <li>• Ngau Chi Wan Landfill as Ngau Chi Wan Park; and</li> <li>• Ma Tso Lung Landfill as a camping and activity ground under short term tenancy.</li> </ul> <p>For the remaining seven restored landfills, the Government set up the RLRFS to fund</p>

	Non-profit-making Organisations and National Sports Associations to develop recreational facilities or other innovative proposals at these seven <sup>1</sup> restored landfills.
Q(k)(iii)	reasons for the long delay in implementing the projects and the latest progress. Whether there is room for improvement in the consultation process with District Councils/non-governmental organizations to speed up the implementation for Batches 2 and 3 restored landfills;
	<p>On 23 June 2014, the EPD consulted the Environmental Affairs Panel of the Legislative Council (LegCo EA Panel) regarding the proposed operation arrangement of the RLRFS. Based on the paper submitted, the EPD tentatively planned to complete the assessment of applications and grant approval-in-principle (AIP) to the successful applicants in August 2015. Subsequent to the provision of supplementary information, the LegCo EA Panel, at its meeting on 23 July 2014, supported the Government to apply to the LegCo Finance Committee (FC) for the non-recurrent funding for the RLRFS.</p> <p>During the implementation of the RLRFS, it was considered necessary to introduce various refinements to the operation arrangement, thus causing delays in the actual implementation of the RLRFS. The main refinements included:</p> <p>(a) more detailed documentation (including a detailed application form, a guide to applications, a technical information kit for each restored landfill and a dedicated website for the RLRFS etc.) was prepared to facilitate the applicants to take due consideration of the site characteristics and constraints as well as the assessment requirements, so that the applicants were well informed to prepare their submissions;</p> <p>(b) interviews with shortlisted applicants were considered necessary during assessment of applications, such that the SC might seek direct clarifications from applicants and assess their applications more carefully. Additionally, selected applicants were also required to enhance their proposals based on the suggestions received during the assessment process (refer to (k)(vi) on the key activities of the SC); and</p> <p>(c) enhanced engagement with the relevant District Councils (DCs) at an early stage of the RLRFS was considered necessary, such that views of the local community could be timely considered in the assessment process. The EPD and the SC thus consulted the DCs concerned in September 2015 prior to the launching of RLRFS, and in January 2017 after receiving the applications.</p> <p>An AIP was granted to Tung Wah Group of Hospitals (TWGHs) in February 2018 so that the proposed development of camp site-cum-green education ground at TKOIL could be taken forward, and TWGHs is now preparing the Technical Feasibility Statement (TFS) for the proposed project. In addition, Christian Family Service Centre (CFSC) is preparing the detailed revitalisation proposal for MYTCL with a view to obtaining the AIP the soonest possible.</p>

<sup>1</sup> There are seven restored landfills under the RLRFS, namely MYTCL, MYTWL, NTML, PPVL, SLSL, TKOIL and TKOL-II/III.

	<p>On the other hand, in accordance with the experience from the Batch 1 of RLRFS, the EPD and the SC will review the operation arrangement of the RLRFS so that the implementation of Batches 2 and 3 of RLRFS could be refined (including arrangement to expedite the overall implementation progress and the DC consultation) before inviting applications from eligible organisations for the remaining restored landfills.</p>												
Q(k)(iv)	timetable for implementing the projects in batch one to three; and												
	<p>As mentioned in (k)(iii), the first project under Batch 1 of RLRFS is now at the stage of preparing the TFS following the established procedures of public works projects. Upon the approval from the relevant Bureau, pre-construction activities will be carried out (including site investigation and survey, Landfill Gas Hazard Assessment, detailed design, drafting of the tender documents etc.) with a view to consulting the LegCo EA Panel and the Public Works Subcommittee in 2019-2020, followed by seeking funding approval from the LegCo FC.</p> <p>Further to the completion of TFS of the Batch 1 projects, the EPD will commence the review of Batch 1 of RLRFS. It is expected that the outcome of the review and the proposed refinements could be provided to the SC for consideration in 2019, the EPD will then develop the refinement details and relevant application information and arrangement for Batch 2 of RLRFS. Following the completion of the assessment of Batch 2 applications, implementation of Batch 3 of RLRFS will commence. EPD will expedite the commencement and implementation of Batches 2 and 3 of RLRFS.</p>												
Q(k)(v)	a chronology of actions taken/will take with timeline on inviting applications under the Funding Scheme for PPVL and explain the reasons for the delays using Table 8 of paragraph 4.26; and												
	<p>The timeline on inviting applications under the RLRFS for PPVL and the reasons for the delays is listed in Table 8 of paragraph 4.26 below:</p> <table border="1"> <thead> <tr> <th><b>Tentative timeframe submitted to LegCo in June 2014</b></th><th><b>Key action</b></th><th><b>Actual completion date (Delay as of Dec 2017)</b></th><th><b>Major reasons for the delay</b></th></tr> </thead> <tbody> <tr> <td rowspan="2">Dec 2014 to Apr 2015</td><td>(a) To seek FC's approval for non recurrent funding of \$40 million</td><td>May 2015 (1 month)</td><td rowspan="2"> <ul style="list-style-type: none"> <li>Revised the operation details and arrangement of the RLRFS based on the suggestions from the SC</li> <li>Carried out site surveys for each Batch 1 restored landfill in order to collect the latest site information, e.g. the topography</li> </ul> </td></tr> <tr> <td>(b) To invite preliminary</td><td>Nov 2015 (7 months)</td></tr> </tbody> </table>			<b>Tentative timeframe submitted to LegCo in June 2014</b>	<b>Key action</b>	<b>Actual completion date (Delay as of Dec 2017)</b>	<b>Major reasons for the delay</b>	Dec 2014 to Apr 2015	(a) To seek FC's approval for non recurrent funding of \$40 million	May 2015 (1 month)	<ul style="list-style-type: none"> <li>Revised the operation details and arrangement of the RLRFS based on the suggestions from the SC</li> <li>Carried out site surveys for each Batch 1 restored landfill in order to collect the latest site information, e.g. the topography</li> </ul>	(b) To invite preliminary	Nov 2015 (7 months)
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		proposals		level and area, so as to facilitate the applicants to prepare their applications
		(c) To conduct briefings and site visits for all interested parties	Nov 2015 to Jan 2016 (7 to 9 months)	<ul style="list-style-type: none"> <li>■ Prepared more detailed documentation (e.g. detailed application form, guide to application, technical information kits, site plans and dedicated website) to facilitate applicants to take due consideration of the site characteristics, details and development constraints of PPVL and the assessment requirements</li> <li>■ For the purpose of enhancing district consultation, the EPD consulted the Tuen Mun DC in Sept 2015 on the preferred afteruses of the PPVL</li> </ul>
	May 2015 to Aug 2015	(d) To conduct vetting and assessment by the Steering Committee	Feb 2017 (18 months)	<ul style="list-style-type: none"> <li>■ Taking note of the considerable constraints and technical difficulty in developing afteruse projects on restored landfills, the EPD decided to allow a longer period for the applicants to prepare and submit their applications. Application for Batch 1 of RLRFS was closed on 29 Apr 2016.</li> <li>■ All Batch 1 applications were circulated to relevant Government Bureaux / Departments (B/Ds) for comment. After analysing the comments from B/Ds on individual applications, it was noted that the technical details provided in the applications were in general not sufficient. The EPD therefore invited all applicants to provide supplementary information on the engineering and environmental feasibility of their proposed projects. The supplementary information received was provided to</li> </ul>

				<p>relevant Government B/Ds for further comment</p> <ul style="list-style-type: none"> <li>■ The EPD circulated an information paper to the SC in Nov 2016. The information paper summarised the applications received under Batch 1 of RLRFS and reported the arrangement to enhance consultation with the relevant DCs</li> <li>■ For the purpose of enhancing district consultation, the EPD consulted the Tuen Mun DC in Jan 2017 on the proposed uses received for the PPVL (without disclosure of the applicants' identities)</li> </ul>
		(e) To grant approval-in-principle to successful applicants	Not applicable <sup>2</sup>	Not applicable
	From Sep 2015 onwards	(f) To conduct detailed planning, architectural, landscape and engineering design by successful applicants	Not applicable	Not applicable
		(g) To consult relevant District Councils		
		(h) To seek funding approval		

<sup>2</sup> For PPVL, since the applicants in general failed to address the various site constraints in developing their proposals, the SC did not recommended the Government to accept any application.

	<table><tr><td></td><td>pursuant to the established arrangements</td><td></td><td></td></tr><tr><td></td><td>(i) To grant formal approval to successful applicants</td><td></td><td></td></tr><tr><td></td><td>(j) To implement the projects by successful applicants</td><td></td><td></td></tr></table>		pursuant to the established arrangements				(i) To grant formal approval to successful applicants				(j) To implement the projects by successful applicants		
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Q(k)(vi)	membership of the Steering Committee on the Funding Scheme, number of meetings held, and copy of minutes of these meetings.												
	<p>To take the RLRFS forward, the Government has established a SC to advise on the operational arrangements of the RLRFS and to assist in assessing the applications and monitoring the progress of approved projects. The SC is chaired by a non-official Chairman and comprises members from different fields and professions including accounting, finance, architecture, engineering, sports, and social services etc., as well as representatives from DCs where restored landfills are located. Representatives of relevant Government B/Ds also join the SC as ex-officio members. The membership list of current and preceding terms of SC is tabulated below:</p> <table><tr><th>2014 – 2016 First term of SC</th><th>2016 – 2018 Second term of SC</th><th>2018 – 2020 Third term of SC</th></tr><tr><td><u>Chairman</u> Mr Bernard Chan</td><td><u>Chairman</u> Mr Bernard Chan</td><td><u>Chairman</u> Mr Bernard Chan</td></tr><tr><td><u>Members</u> Professor Choy Kin-kuen Mr Kenneth Fok Kai-kong Dr John Fung Yat-chu Ms Fay Ho Kim-fai Ms Vivian Lau Sio-kuan Ms Elizabeth Law Dr Winnie Law Wai-yi Mr Vincent Ng Wing-shun Mr Nelson Chan Wah-yu (Representative of Kwun Tong</td><td><u>Members</u> Professor Choy Kin-kuen Mr Kenneth Fok Kai-kong Dr John Fung Yat-chu Ms Fay Ho Kim-fai Ms Elizabeth Law Dr Winnie Law Wai-yi Ms Theresa Ng Choi-yuk Mr Vincent Ng Wing-shun Mr Nelson Chan Wah-yu (Representative of Kwun Tong</td><td><u>Members</u> Professor Choy Kin-kuen Mr Kenneth Fok Kai-kong Dr John Fung Yat-chu Ms Fay Ho Kim-fai Ms Jane Hui Chun-yu Ms Elizabeth Law Dr Winnie Law Wai-yi Mr Leung Man-kit Ms Theresa Ng Choi-yuk Mr Vincent Ng Wing-shun</td></tr></table>			2014 – 2016 First term of SC	2016 – 2018 Second term of SC	2018 – 2020 Third term of SC	<u>Chairman</u> Mr Bernard Chan	<u>Chairman</u> Mr Bernard Chan	<u>Chairman</u> Mr Bernard Chan	<u>Members</u> Professor Choy Kin-kuen Mr Kenneth Fok Kai-kong Dr John Fung Yat-chu Ms Fay Ho Kim-fai Ms Vivian Lau Sio-kuan Ms Elizabeth Law Dr Winnie Law Wai-yi Mr Vincent Ng Wing-shun Mr Nelson Chan Wah-yu (Representative of Kwun Tong	<u>Members</u> Professor Choy Kin-kuen Mr Kenneth Fok Kai-kong Dr John Fung Yat-chu Ms Fay Ho Kim-fai Ms Elizabeth Law Dr Winnie Law Wai-yi Ms Theresa Ng Choi-yuk Mr Vincent Ng Wing-shun Mr Nelson Chan Wah-yu (Representative of Kwun Tong	<u>Members</u> Professor Choy Kin-kuen Mr Kenneth Fok Kai-kong Dr John Fung Yat-chu Ms Fay Ho Kim-fai Ms Jane Hui Chun-yu Ms Elizabeth Law Dr Winnie Law Wai-yi Mr Leung Man-kit Ms Theresa Ng Choi-yuk Mr Vincent Ng Wing-shun	
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As at today, seven SC meetings were held, and some issues were followed up separately through circulation of papers. The key activities of the SC were listed below:

Dates	Key activities
14 May 2014	SC Meeting to discuss the operation arrangement of the RLRFS
19 June 2014	The SC visited the MYTWL in Kwun Tong and the Ngau Chi Wan Park (former Ngau Chi Wan Landfill) in Wong Tai Sin, so as to understand the conditions of restored landfills and make reference to the revitalised development
19 September 2014	The SC visited the TKOIL, TKOL-II/III, MYTCL and Sai Tso Wan Recreation Ground, so as to understand the conditions of restored landfills and make reference to the revitalised development
25 September 2014	The SC visited the PPVL, SLSL and NTML, so as to understand the conditions and development constraints of restored landfills
10 December 2014	At the request of some SC members, another visit to the TKOIL, TKOL-II/III, MYTCL and Sai Tso Wan Recreation Ground was arranged



	17 March 2015	SC Meeting to discuss the application and assessment arrangement of the RLRFS
	20 July 2015	Circulated a paper to seek SC's view on Home Affairs Bureau's proposal to develop a Football Training Centre on part of the TKOIL
	27 November 2015	The SC attended the kick-off ceremony of Batch 1 of RLRFS at the Jordan Valley Park (former Jordan Valley Landfill) <i>[Batch 1 of RLRFS was opened to applications from 27 November 2015 to 29 April 2016. Taking note of the considerable constraints and technical difficulty in developing afteruse projects on restored landfills, EPD decided to give a longer period (till 29 April 2016) for the applicants to prepare and submit their applications.]</i>
	6 November 2016	Circulated a paper to summarise the applications received under Batch 1 of RLRFS and report the enhanced arrangement of DC consultation <i>[Application for Batch 1 of RLRFS was closed on 29 April 2016, all applications were then circulated to relevant Government B/Ds for comment. After EPD had analysed the comments from B/Ds and followed up with all applicants to provide supplementary information, SC meetings were arranged to assess the applications. Please refer to the reply of (k)(v) for details.]</i>
	12 January 2017	The EPD and SC members (John Fung and Winnie Law) attended the sub-committee meeting of Sai Kung DC to consult DC the proposed uses of TKOIL received under Batch 1 of RLRFS (without disclosure of the applicants' identities)
	19 January 2017	The EPD and the SC Chairman and member (Theresa Ng) attended the sub-committee meeting of Kwun Tong DC to consult DC the proposed uses of MYTCL received under Batch 1 of RLRFS (without disclosure of the applicants' identities)
	20 January 2017	The EPD and SC member (Winnie Law) attended the sub-committee meeting of Tuen Mun DC to consult DC the proposed uses of PPVL received under Batch 1 of RLRFS (without disclosure of the applicants' identities)
	16 February 2017	SC Meeting to discuss and assess the applications for MYTCL and TKOIL
	23 February 2017	SC Meeting to discuss and assess the applications for PPVL
	26 April 2017	SC Meeting to interview shortlisted applicants such that the applicants could present their proposals and the SC could seek direct clarifications from the applicants
	15 June 2017	SC Meeting to consider the supplementary information provided by shortlisted applicants and assess their applications. After detailed consideration of all applications for Batch 1 of RLRFS in accordance with the established assessment procedures and criteria, the SC considered the applications from CFSC and TWGHs to be the most

		meritorious, and invited them to develop detailed afteruse proposals to revitalise MYTCL and TKOIL respectively
	30 October 2017	SC Meeting to discuss TWGHs' detailed revitalisation proposal for TKOIL and provide suggestions to enhance the proposal
	5 December 2017	Circulated a paper to inform SC of the enhancement proposal provided by TWGHs. The enhancement proposal was subsequently endorsed by the SC
	<p>The notes of the first to the sixth SC meetings (English version only) are enclosed at <b>Annex 21</b><sup>3</sup>.</p> <p>The notes of SC meetings contain details of applicants and their applications. As some applicants may apply for the impending RLRFS again, and without prior consent from the applicants, the notes of SC meetings should be for PAC's internal reference only and shall not be included in the PAC Report.</p>	

**Environmental Protection Department**  
**May 2018**

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*3 The notes of the seventh SC meeting is not enclosed as it is not yet endorsed by the SC.*

***\*Note by Clerk, PAC:** Annex 21 not attached.*

<b>Annex</b>	<b>Relevant Question</b>	<b>Document</b>
Annex 1	Q (b)(i)	• Comparison between WPCO Licence, Technical Memorandum and Contractual Requirements
Annex 2	Q (b)(i)	• Technical Memorandum Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters
Annex 3	Q (b)(ii)	• Detailed Comparison between WPCO Licence and Contractual Requirements
Annex 4	Q (b)(v)	• Table of Allocation of Non-compliance Points at PPVL
Annex 5	Q (c)	• Information Relating to Employment of Contractor; Tendering Procedures of Contractors, and Number of Invited Prequalified Tenderers
Annex 6	Q (d)	• PPVL Early Termination Clauses
Annex 7	Q (e)	<ul style="list-style-type: none"> <li>• Content Page of PPVL Tender Documents</li> <li>• PPVL Prequalification Document - Experience Requirement</li> <li>• PPVL Instruction to Tenderers - Evaluation Criteria</li> <li>• PPVL Specification Section 26 &amp; 27</li> </ul>
Annex 8	Q (f)	• PPVL Environmental Review Report (April 2011)
Annex 9	Q (g)(i)	• Key Events of Contractor's Non-compliances with Statutory and Contractual Requirements at PPVL (January 2016 to May 2018)
Annex 10	Q (g)(ii)	• Records of Complaints
Annex 11	Q (g)(iii)	• Investigation Report
Annex 12	Q (g)(iii)	• 2016 EPD Review Report
Annex 13	Q (g)(iv)	• Aftercare Monthly Report No. 142 for April 2018

**\*Note by Clerk, PAC:** *Annexes 2 to 10, 12 and 13 not attached.*

Annex 14	Q (g)(iv)	• Aftercare Monthly Report No. 137 for November 2017
Annex 15	Q (g)(v)	• Operation Manual (Before 2016 EPD Review)
Annex 16	Q (g)(v)	• Daily Operation Inspection Form Sample (Before 2016 EPD Review)
Annex 17	Q (g)(v)	• Operation Manual (After 2016 EPD Review)
Annex 18	Q (g)(v)	• Daily Operation Inspection Form Sample (After 2016 EPD Review)
Annex 19	Q (g)(viii)	• Sampling Locations of Leachate Treatment Plant (LTP) in PPVL (Before May 2016)
Annex 20	Q (h)	• Follow Up Correspondence on Missing Daily Log Sheets
Annex 21	Q (k)(vi)	• Meeting Notes of the First to the Sixth Steering Committee Meeting on the Restored Landfill Revitalisation Funding Scheme

**\*Note by Clerk, PAC:** *Annexes 14 to 21 not attached.*

**Comparison between WPCO licence, Technical Memorandum and Contract Requirements**

	Requirements in the license(s) issued by the Director of Environmental Protection under the Water Pollution Control Ordinance (WPCO)*	Requirements in the Technical Memorandum Standards For Effluents Discharged Into Drainage And Sewerage Systems, Inland And Coastal Waters (TM) (Cap. 358AK)*	Requirements in the landfill restoration contracts*
1. Operating temperature of the landfill gas flaring plant	No relevant requirements	No relevant requirements	Urban Landfills and Shuen Wan Landfill Restoration Contracts: Not lower than 870°C Other Landfill Restoration Contracts: Not lower than 1000°C
2. Maximum level of daily leachate discharge	Gin Drinkers Bay Landfill: <ul style="list-style-type: none"> <li>480 m<sup>3</sup>/day</li> </ul> Ma Yau Tong Central and Jordan Valley Landfills:	No relevant requirements	Comply with the requirements of licence issued under the WPCO

	<ul style="list-style-type: none"> <li>• 350m<sup>3</sup>/day</li> </ul> <p>Pillar Point Valley Landfill:</p> <ul style="list-style-type: none"> <li>• 990m<sup>3</sup>/day (For dry seasons)</li> <li>• 2600m<sup>3</sup>/day (For wet seasons)</li> </ul> <p>Tseung Kwan O Stage II/III Landfill:</p> <ul style="list-style-type: none"> <li>• 750m<sup>3</sup>/day (For dry seasons)</li> <li>• 1450m<sup>3</sup>/day (For wet seasons)</li> </ul>		
3. Maximum level of total nitrogen of leachate discharge	<p>Gin Drinkers Bay, Ma Yau Tong Central, Jordan Valley and Tseung Kwan O Stage II/III Landfills :</p> <ul style="list-style-type: none"> <li>• 200mg/L</li> </ul> <p>Pillar Point Valley Landfill:</p> <ul style="list-style-type: none"> <li>• 100mg/L (For wet seasons)</li> <li>• 200mg/L (For dry</li> </ul>	Under the TM, the limit for total nitrogen level varies under different flow rate. Please refer to the enclosed TM.	<p>Gin Drinkers Bay, Ma Yau Tong Central, Jordan Valley and Tseung Kwan O Stage II/III Landfills :</p> <ul style="list-style-type: none"> <li>• 200mg/L</li> </ul> <p>Pillar Point Valley Landfill:</p> <ul style="list-style-type: none"> <li>• Comply with the requirements of</li> </ul>

	seasons)		licence issued under the WPCO
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\*Note: If the requirements are different for individual contracts/landfills, list out these requirements separately.

**Pillar Point Valley Restored Landfill  
Investigation of Alleged Mal-operation**

**Findings of the Investigation Team**

**May 2017**



## Introduction

1. The Pillar Point Valley Restored Landfill (PPVRL) received municipal solid waste between 1983 and 1996. PPVRL is now in the aftercare period undertaken by EPD's Restoration Contractor – SITA Waste Services Limited (SITA). Typical aftercare work includes operation and maintenance of the treatment facilities for landfill gas and leachate.

2. On 11 January 2016, EPD started receiving complaints against alleged mal-operation of the PPVRL. Issues under complaint were:

- (a) The landfill gas treatment system had been operated at a temperature below the contract requirement, leading to air pollution problem;
- (b) Substandard leachate had been discharged to the foul sewer, leading to water pollution problems;
- (c) Untreated leachate had been discharged through an overflow pipe to the nearby stream.

The complainants also complained against the handling of their complaints by EPD. The complaints were -

- (a) Their complaint case had been pushed around between Special Waste and Landfill Restoration Group (SLG) and Regional Office (West) (RWG); and
- (b) EPD staff might have disclosed the identities of the complainants to SITA, which had led to their subsequent dismissal by SITA, and
- (c) SITA had been informed of the inspection by RWG one day before the EPD's inspection on 28 January 2016.

3. In response to the complaints, the Director of Environmental Protection has assigned an Investigation Team comprising a Deputy Director of Environmental Protection, three Principal Environmental Protection Officers and a Senior Environmental Protection Officer to conduct an investigation into the matters under complained. The findings of the investigation are provided in the following paragraphs.

## Temperature of the Vent Gas Unit

4. The landfill gas treatment facility of PPVRL comprised mainly a Vent Gas Unit (VGU). The VGU was designed to operate with landfill gas having a methane content of 20% to 65% at the temperature of 1000°C – 1200°C and a minimum retention time of 0.6 seconds. The contract between EPD and SITA required the landfill gas flaring temperature to be maintained at over 1000°C. If the methane content of landfill gas was not sufficient to support the burning process and maintain the temperature, external fuel (diesel) would be supplemented.

5. Since diesel was needed to support the combustion temperature to above 1000°C in case the methane content of landfill gas was not sufficient, the Investigation Team had also looked at the diesel consumption data. From the records provided by SITA, since January 2016, a large amount of diesel has been consumed by the VGU to maintain the temperature to above 1000°C, coincidentally after the complaints had been lodged. The diesel consumption in November and December 2015 was much lower.

6. Various operation parameters of the PPVRL including the VGU temperature were recorded in daily log sheets filled in by the technicians. The daily log sheets showed that the VGU temperature had been below the contractual requirement of 1000°C for many occasions in December 2015, February and March 2016. The Investigation Team also noted discrepancies between the VGU temperature recorded in the daily log sheets and those in the Aftercare Monthly Reports submitted by SITA to EPD. The low-temperature incidents had not been reported in the Aftercare Monthly Reports.

7. The Investigation Team had also considered whether the incidents with VGU temperature below 1000°C could emit excessive hazardous air pollutants (HAPs) such as dioxin and furan. On emission of dioxins and furans from landfill gas flaring, the USEPA (United States Environmental Protection Agency) had conducted a review<sup>1</sup> which concluded that “*EPA believes that the potential for dioxin emissions from the combustion of landfill gas is small.*” Given the USEPA review conclusion, the potential of large amount of dioxin emissions due to combustion of landfill gas should be small. The background dioxin levels measured by EPD in Hong Kong in the last 3 years also did not show any anomalies.

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<sup>1</sup><https://www3.epa.gov/lmop/faq/public.html>

## Discharge of Substandard Effluent

8. The key component of the leachate treatment system was the Ammonia Stripping Plant (ASP), which recovered the heat generated from the VGU to produce hot steam to strip the aqueous ammonia out of the leachate generated by PPVRL. The treated leachate would be discharged to the foul sewer leading to the Pillar Point Sewage Treatment Works for treatment and then disposal via a submarine outfall to the waters south of Pillar Point. As rainfall would dilute the leachate generated, the discharge licence had two sets of effluent standards, i.e. the Total Nitrogen level of 200 mg/L at a maximum flow rate of 894 m<sup>3</sup>/day during the November – May (dry season), and the Total Nitrogen level of 100 mg/L at a maximum flow rate of 2600 m<sup>3</sup>/day during June – October (wet season).

9. The ASP was designed to operate at the temperature of 72°C – 74°C in order to strip off ammonia from the leachate before discharge. A test conducted by the Investigation Team in May 2016 found that the ASP had malfunctioned for an unknown period of time. The ASP temperature recorded in the daily log sheets during 1 Sept 2015 – 30 Apr 2016 indicated that the ASP was operated with the majority of the time with the top part of the ammonia stripping column operating between 60°C – 65°C, and the middle and bottom part of the ammonia stripping column operating below 60°C. The entire ammonia stripping column was operating below 60°C during December 2015. Since the ASP was operating below the designed temperature range, the ammonia removal capability could have reduced.

10. Regarding the leachate to be treated, the typical Total Nitrogen content of the strong leachate was about 350 mg/L and that of the weak leachate was about 150 mg/L – 170 mg/L. The latter was below the dry season discharge standard of 200 mg/L even without treatment. This allowed some freedom to manage the leachate treatment operation by mixing strong leachate with weak leachate such that even though the ASP was not functioning, the discharge might still meet the standard during the dry season.

11. The wet season discharge standard was 100 mg/L. The daily log sheets showed that the ASP had been operating below the design temperature range as a norm. Since the typical nitrogen content of weak leachate was about 150 mg/L – 170 mg/L and that of the strong leachate was about 350 mg/L, mixing of leachate could not meet this wet season discharge standard. Hence the Investigation Team could not exclude the possibility that substandard discharge had happened given the operation temperature condition as recorded. However, due to limitation of available data, the frequency and quantity of the substandard discharge could not be established.

12. The treated leachate was discharged via the public sewerage system and a submarine outfall into the sea south of Pillar Point and the key concerned parameter is ammonia. To check whether the marine waters nearby had been unduly affected, the Investigation Team checked the monthly water quality data at the EPD's Routine Marine Monitoring Station (NM2) which was located close to the outfall. The water quality objective is 0.021 mg/L of unionized ammonia nitrogen as annual average. As shown in the table below the unionized ammonia nitrogen concentration between 2014 – 2016 was well below the water quality objective. The marine environment had been normal.

**Unionized Ammonia Concentration at the EPD's Routine Marine Monitoring Station (NM2)**

Year	2014	2015	2016
Unionized Ammonia Nitrogen (mg/L)			
Jan	0.005	0.004	0.011
Feb	0.004	0.002	0.002
Mar	0.004	0.003	0.005
Apr	0.008	0.003	0.005
May	0.006	0.008	0.002
Jun	0.002	0.002	0.003
Jul	0.003	0.001	0.002
Aug	0.000	0.001	0.003
Sept	0.001	0.005	0.003
Oct	0.001	0.000	0.003
Nov	0.002	0.003	0.003
Dec	0.002	0.002	0.003
Annual Average	0.003	0.003	0.004

Discharge of Untreated Leachate to the Stream

13. The Investigation Team noticed that the contaminated ground water collection chamber had an overflow pipe leading to the stream next to PPVRL. Inspections found that the overflow pipe was actually blocked. No significant quantity of effluent could go out through the pipe. Close examination showed that the cover was not new, i.e. the overflow pipe had been blocked for a long time. Therefore untreated leachate could not be discharged to the stream via the overflow pipe.

14. Further dye tests revealed that only a very small flow was observed seeping out of the pipe when the pump was switch off and the water level in the chamber was allowed to rise up to 30 cm above the overflow pipe. In view of this, it is unlikely that a large amount of leachate could have been deliberately discharged to the stream through this overflow pipe. Between 28 Jan 2016 and 15 April 2016, EPD collected 5 water samples from the stream next to PPVRL. The Total Nitrogen level of the stream was below 2 mg/L, indicating that the stream was not polluted. Hence the Investigation Team considered that this allegation was not substantiated.

#### Complaint Pushed Around within EPD

15. The Investigation Team found that upon receipt of the complaints, both SLG and RWG had taken immediate actions to carry out the site inspection and arranged for water and effluent sampling, collection of site diary and log sheets for follow up actions. The complaints were handled by 2 groups from different aspects. Complaints against violation of environmental laws would be handled by the law enforcement team (i.e. RWG) while contract management issues would be handled by the contract management team (i.e. SLG).

#### Complainant's Identity Disclosed

16. On the allegation that EPD staff might have disclosed their identities to SITA, the Investigation Team found that one of the Complainants, had alerted the SITA staff of PPVRL on 11 Jan 2016 that he would make a report to EPD on the illegal discharge of wastewater to the sea. Hence SITA might already be aware of the identity of the technicians before they made a report to EPD. No other evidence could be found that EPD staff had disclosed the identities of the Complainants to SITA.

#### SITA Informed Before Inspection

17. Regarding the allegation that SITA had been informed of the inspection by EPD staff one day before the inspection on 28 Jan 2016, the Investigation Team found that there had been a telephone communication between the enforcement staff of RWG and the contract management staff of SLG at the site office of PPVRL before the inspection, in order to let the SLG site office get ready some relevant drawings to facilitate the inspection. The communication was part of the normal operation which complied with the operation guidelines. No other evidence could be found that SITA had been informed of the inspection beforehand. Nonetheless, all enforcement staff have been reminded of the importance of keeping enforcement plans and actions on a strictly confidential basis, in order not to jeopardise the effectiveness of the planned enforcement actions.

## Follow Up Actions

18. The Complainants were PPVRL technicians employed by SITA. They claimed that they had been instructed to operate the VGU below 1000°C, discharge substandard leachate to the foul sewer, as well as to enter false data in the daily log sheets. It was confirmed that the VGU had been operated below the required temperature for substantial amount of time in December 2015 as well as February and March 2016. There were many discrepancies in the VGU temperature reported in the Aftercare Monthly Report and recorded in the daily log sheets, and the low-temperature incidents had not been reported in the Aftercare Monthly Reports submitted to EPD. Further investigation of these matters might be beyond the scope of the pollution control laws and normal management of the PPVRL contract between EPD and SITA. The case had been referred to the Police for further investigation.

19. The wet season discharge standards came into effect on 1 June 2016. The effluent samples collected by RWG revealed that the Total Nitrogen of the discharges exceeded the wet season licence limit of 100 mg/L on 8 occasions (i.e. 1 June 2016, 22 and 24 August 2016, and 12, 14 and 25 September 2016, and 5 and 18 October 2016). Based on the reports from SITA, during the heavy rain period the quantities of effluent discharges from the plant also exceeded the daily flow limit of 894 m<sup>3</sup>/day permitted under the licence on 10 occasions (i.e. from 22 to 31 May 2016). SITA also failed to notify EPD within 24 hours upon the occurrence of discharge with daily flow rate exceeding the licence limit on 2 occasions (i.e. 26 and 28 May 2016). RWG had initiated prosecutions against SITA on the above incidents under the Water Pollution Control (General) Regulation, Cap. 358D.

20. The Environmental Infrastructure Division of EPD had taken immediate actions to enhance site monitoring, and had closely monitored SITA's follow-up actions. As at the end of April 2017, SITA has been deducted altogether a total sum of about \$5.5 million from the contract payment for the non-compliance of the VGU temperature, leachate treatment plant operation and discharge. SITA had taken actions to rectify the operation problem and the major leachate treatment plant refurbishment works have been substantially completed in January 2017.

- END -

## Abbreviations

ASP	Ammonia Stripping Plant
EPD	Environmental Protection Department
PPVRL	Pillar Point Valley Restored Landfill
RWG	Regional West Office, EPD
SLG	Special Waste and Landfill Restoration Group, EPD
SITA	SITA Waste Services Limited, the contractor of the Landfill Site
VGU	Vent Gas Unit

- END -

本署檔案  
OUR REF: EP R80/AUDIT/2/3 (2017)  
來函檔案  
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**By Email and Fax**

Public Accounts Committee  
Legislative Council Secretariat  
Legislative Council Complex  
1 Legislative Council Road  
Central, Hong Kong  
(Attn: Mr. Anthony CHU)

11 June 2018

Dear Sir,

**Public Accounts Committee  
Consideration of Chapter 1 of the Director of Audit's Report No.70  
Management of Restored Landfills**

Thank you for your letter dated 30 May 2018. Please find in the enclosed appendix the information requested. If you need any further information, please contact the undersigned.

Yours faithfully,

(FONG Kin-wa)

for Director of Environmental Protection

Encl.

c.c. Secretary for Environment (fax no. 2537 7278)  
Secretary for Home Affairs (fax no. 2591 5536)  
Director of Leisure and Cultural Services (fax no. 2691 4661)  
Director of Architectural Services (fax no. 2810 7341)  
Director of Home Affairs (fax no. 2574 8638)  
PEO(G), FSTB(TsyB) (Mike WM CHENG/TSYB/HKSARG)  
Director of Audit (fax no. 2583 9063)

} w/o encl.



## Appendix - EPD's response to PAC's request for information

Q(a)	<p>according to Note 39 of paragraph 3.2 (all paragraph numbers mentioned hereinafter refer to the paragraph number of the Audit Report), details regarding the "sub-allocation" arrangement between EPD and LCSD, including the role, division of work and responsibilities between the two departments in each of the design, construction and operation periods of the recreational facilities at restored landfills. Given the special nature of restored landfills which warrants special attention in developing the sites, whether EPD would provide technical advice to LCSD and other departments which acted as the works agent. If yes, details and records of the advice given regarding the seven sites in Table 4 of paragraph 3.2</p>
	<p>Regarding the land in restored landfills, the Lands Department (LandsD) allocated them to the Environmental Protection Department (EPD) via temporary government land allocations (TGLAs) to facilitate the EPD to carry out restoration works and aftercare works. According to relevant conditions in the TGLAs, the EPD may, subject to LandsD's approval, sub-allocate portions of the sites to other government departments, including the Leisure and Cultural Services Department (LCSD) for the purpose of development of recreational facilities. Throughout the design, construction and operation periods of the recreational facilities, the EPD would continue to carry out, at the restored landfills (including the portions of the sites which have been sub-allocated to the LCSD), aftercare works such as management and maintenance of all restoration facilities installed at restored landfills and environmental monitoring, until the completion of aftercare works. Furthermore, since restored landfills are no ordinary pieces of land, developing afteruse at restored landfills has to overcome various constraints and technical difficulties. The EPD has provided LCSD and other works agent departments with relevant information of restored landfills and professional advice such as loading limits, settlement changes, potential challenges on project coordination and interface and also vetting the landfill gas hazard assessments submitted by client departments, etc. Throughout the entire project development process, the EPD would continue to provide technical advice and support to the LCSD and other works agent departments.</p> <p>The EPD had in the past provided relevant departments with information of restored landfills and technical advice on planning, design and construction of the recreational facilities listed in Table 4. As a large number of documents are involved, representative ones are extracted and enclosed in <b>Annex</b> for reference.</p>
Q(b)	with reference to Table 4, please explain and provide information on:
(i)	differences in role, division of work and responsibilities between EPD, LCSD and other departments which acted as the works agents in developing the seven recreational projects;
(ii)	factors and criteria when assigning which department as works agents for individual projects;
	The development of the seven recreational projects mentioned in Table 4 were led by the relevant policy bureaux and with their respective departments acting as client departments responsible for the planning and development of the recreational projects, including

**\*Note by Clerk, PAC:**    *Annex not attached.*

consultation with District Councils and other stakeholders, funding application and facilities operation. The works agent departments were responsible for the design and construction of the recreational facilities projects. The client departments and works agent departments for the seven recreational facilities are as follows:

<b>Recreational Facilities Project</b>		<b>Client Department</b>	<b>Works Agent Department</b>
1	Kwai Chung Park	LCSD	ArchSD
2	Wan Po Road Pet Garden	LCSD	HAD
3	Jordan Valley Park	LCSD	ArchSD
4	Sai Tso Wan Recreation Ground	HAB	EPD
5	Ma Yau Tong West Sitting-out Area	LCSD	HAD
6	Ma Yau Tong Central Sitting-out Area	LCSD	HAD
7	Ngau Chi Wan Park	LCSD	ArchSD

Among the seven recreational facilities, Sai Tso Wan Recreation Ground (item 4 in Table 4 of the Report) is the first recreational facility developed in a restored landfill in Hong Kong. The client department was the Home Affairs Bureau (HAB) who chaired the Landfill Afteruse Working Group while the EPD acted as the works agent department to develop the project through a design-build-operate contract arrangement. Regarding the roles and division of work of the EPD in the other projects, please refer to our reply to Q(a).

(iii) relevant works agent for items 3, 4 and 7 sought funding approval from FC of LegCo after detailed design stage, which was different from projects under District Minor Works Programme (i.e. items 2, 5 and 6) in which funding was sought after feasibility study stage (Note 1 to the Table refers); the procedure and approval required for the change/increase in the project cost;

For the Sai Tso Wan Recreation Ground (item 4 in Table 4 of the Report), the client department was the HAB while the EPD acted as the works agent department to develop the project through a design-build-operate contract arrangement. Upon open tendering, the successful bidder immediately commenced detailed design and relevant construction works as required by the contract.


Since the EPD was only involved in item 4 of Table 4 (i.e. Sai Tso Wan Recreation Ground) and acted as a works agent for the project, we are able to provide information relevant to this project only. The chronology of funding application for the Sai Tso Wan Recreation Ground is set out as follows:

(1) On 13 December 2000, the HAB submitted a paper on the Sai Tso Wan Recreation

	<p>Ground to the Public Works Subcommittee (PWSC) of the Finance Committee (FC) of LegCo, applying to upgrade the proposed project to Category A.</p> <p>(2) On 12 January 2001, the application was approved by the FC.</p> <p>(3) In June 2002, the tender prices of all tenders received by the EPD were higher than the original approved project estimate (APE).</p> <p>(4) On 5 September 2002, the Central Tender Board approved the EPD to, after obtaining additional funding, award the design-build-operate contract of the Sai Tso Wan Recreation Ground.</p> <p>(5) In January 2003, as the APE was not sufficient to cover the cost of the recommended tender, the HAB sought the FSTB's approval for increasing the APE from \$39.9M to \$46.5M.</p> <p>(6) On 11 February 2003, the FSTB approved the increase of APE.</p> <p>(7) On 12 February 2003, the design-build-operate contract was awarded by EPD. The works commenced in March 2003 and the Sai Tso Wan Recreation Ground was opened to the public in April 2004.</p> <p>.</p> <p>In addition, we would like to take the opportunity to reiterate that the actual expenditure of the construction works for the project was \$46.4M, which had not exceeded the revised APE (i.e. \$46.5M).</p>
Q(c)	<p>using Kwai Chung Park as an illustration, involvement of relevant government bureaux/departments, relevant DCs and local communities in each of the design, construction and operation stages of developing restored landfills and procedures on seeking funding approval for the project;</p>
	<p>The planned Kwai Chung Park development is located in the restored Gin Drinkers Bay Landfill (GDBL). Similar to other landfills that had completed restoration works, the EPD is responsible for the aftercare works at the restored GDBL, so as to minimize the potential adverse impacts on the environment and to render the landfill safe for beneficial use.</p> <p>As mentioned in our response to Q(a) above, the EPD would continue to carry out, at the restored landfills (including the portions of the sites which have been sub-allocated to the LCSD), aftercare works such as management and maintenance of all restoration facilities installed at restored landfills and environmental monitoring, until the completion of aftercare works. Furthermore, the EPD has provided LCSD and other works agent departments with relevant information of restored landfills and professional advice such as loading limits, settlement changes, potential challenges on project coordination and interface and also vetting the landfill gas hazard assessments submitted by client departments, etc. Throughout the entire project development process, the EPD would continue to provide technical advice and support to the LCSD and other works agent departments. EPD staff also attended meetings of the Working Group on Development of Kwai Chung Park under the Kwai Tsing District Council; briefed members on the aftercare works and the environmental monitoring conducted in the restored landfill; and arranged on-site inspection at GDBL by the members,</p>

	<p>LCSD and other relevant government departments.</p> <p>As for the other items, LCSD, as the client department of the Kwai Chung Park, would provide detailed responses.</p>
Q(d)	<p>whether the Administration would consider that, for future development of restored landfills, it would be beneficial to hire a consultant to conduct a comprehensive feasibility study, recommend mitigation measures and propose a list of development options for consideration by EPD/LCSD, DCs and local communities so as to speed up the development process;</p>
	<p>Over the years, the ENB and EPD have been developing restored landfills into recreational facilities such as recreational ground, sports facility, park etc. The EPD had in the past allocated those lands that were relatively easier to develop into recreational facilities to relevant government departments and sporting associations. From 2015, the remaining lands that could possibly be developed for beneficial uses have been included in the “Restored Landfill Revitalization Funding Scheme” (RLRFS), providing subsidies for the development of recreational facilities or other innovative uses by non-profit-making organizations and sporting associations. The land use conditions and constraints (such as loading limits, settlement, potential difficulties of project interfacing and coordination matters, landfill gas hazard assessment, etc.) are listed out in the technical information kit for reference by the RLRFS applicants. (Technical information kits for RLRFS (Batch 1) can be found at this weblink:  <a href="https://www.epd.gov.hk/epd/tc_chi/environmentinhk/waste/prob_solutions/landfill/application_batch1_arrangements.html">https://www.epd.gov.hk/epd/tc_chi/environmentinhk/waste/prob_solutions/landfill/application_batch1_arrangements.html</a>)</p> <p>Based on their expertise and interests, interested parties can develop innovative afteruse projects and formulate suitable designs based on the actual site conditions.</p> <p>The remaining lands in the restored landfills are mostly slopes with varying gradients. The slopes in various restored landfills differ individually and pose significant limitations and challenges for developing into beneficial uses. In future, if there are any departments or organizations that are interested in developing the sloping areas into recreational facilities or other beneficial uses, the EPD will provide them with the relevant information for studying and devising suitable uses.</p>
Q(e)	<p>whether EPD has informed LCSD of the technical difficulties and obstacles (existence of slopes and location of restoration facilities) when sub-allocating the site to the latter for development, if yes, details of the information provided to LCSD and if no, reasons why not;</p>
	<p>As the Kwai Chung Park is still in its planning and design stage, EPD will sub-allocate the concerned areas to LCSD before the construction works commence. Nonetheless, the EPD has provided relevant information and comments to LCSD on Kwai Chung Park development. The details are as follow:</p> <p>(1) In June 2001, the EPD provided technical advice to the LCSD on the proposed</p>

	<p>development of the Football Training Centre in the Kwai Chung Park;</p> <p>(2) In August 2002, the EPD provided technical advice to LCSD on the proposed development of the grass skiing ground in the Kwai Chung Park, including the possible impacts to restoration facilities during site formation works;</p> <p>(3) Between June and October 2013, the EPD provided technical advice on the proposed Kwai Chung Park, including that LCSD and ArchSD needed to (a) consider the maximum loading capacity and differential ground settlement at the Gin Drinkers' Bay landfill (GDBL); (b) carry out Landfill Gas Hazard Assessment and adopt mitigation and safety precaution measures in accordance with the assessment finding; and (c) consider the large sloping areas and large numbers of monitoring wells within GDBL.</p> <p>The LCSD and ArchSD are now compiling the Technical Feasibility Statement for the Kwai Chung Park development. The EPD will continue to provide the two departments with technical advice.</p>
Q(f)	<p>ArchSD informed HAB/LCSD in May 2014 and May 2017 that a landfill gas hazard assessment should be conducted before proceeding with the Technical Feasibility Statement to confirm the technical feasibility of the proposed project (paragraphs 3.7 and 3.10 refer), and expressed concern in May 2017 on whether the project could be launched before 2022; reasons for EPD/ArchSD to have "no objection" for HAB/LCSD to carry out the landfill gas hazard assessment at detailed planning stage despite that the findings of the assessment might affect the completion time and cost of the project;</p>
	<p>According to the "Landfill Gas Hazard Assessment Guidance Note" (LFGHAGN) and the "Professional Persons Environmental Consultative Committee Practice Note PN 3/96" (ProPECC PN 3/96), when developing any piece of land within a landfill site or within a 250m zone around any landfill site, the project proponent and/or the works agent should adopt suitable precautionary measures in order to minimize the risk due to the lateral migration of landfill gas. Departments should refer to the requirements as stated in the LFGHAGN and the ProPECC PN 3/96 when undertaking the landfill gas hazard assessment for the proposed development, in order to evaluate the risk and design suitable precautionary or protective measures, so as to ensure the proposed development can be utilized in a safe manner.</p> <p>As per the LFGHAGN, the assessment process often comprises two stages. The first stage, or 'preliminary qualitative assessment', is carried out at the planning stage of a development project. While its assessment scope will be constrained by the level of available detail about the proposed development, the assessment result may be used to determine the in-principle acceptability of a proposed development and to identify the scope of any further investigations which may be required to complete the assessment.</p> <p>In the responses to LCSD in January 2015 and June 2017, the EPD expressed no objection to</p>

	LCSD to make reference to the practices adopted in previous relevant examples such as the Ngau Chi Wan Recreation Ground and the Jordan Valley Park, i.e. to carry out preliminary qualitative assessment for the Kwai Chung Park project in accordance with the LFGHAGN and to review and reassess in detail during the project’s detailed design stage. Based on past experience in developing similar projects, the EPD opines that such arrangements in general would not affect the project’s completion date and cost.															
Q(g)	records of continuous topographical survey conducted by EPD on the site between 2007 and 2011, number of survey points being monitored and whether unusual ground settlement problem was revealed during the period; when were the results of topographical surveys conducted by Consultant A and Contractor C (which recorded a difference in site levels of 0.7 metre and 1.59 metres respectively) made known to EPD and whether it had provided advice on the remedy or mitigation measures to HAB (paragraphs 3.26(b) and 3.27(e) refer); if yes, of the details and if no, reasons why not. Has EPD studied the reasons for the unusual ground settlement problem? If yes, the findings and if no, reasons why not;															
	<p>According to the Tseung Kwan O landfills restoration contract, the contractor had installed settlement markers at the Tseung Kwan O Stage I Landfill (TKOL-I) at a maximum spacing of 100m, such that the settlement monitoring would cover the entire restored landfill. Currently, there are about 40 settlement markers at the TKOL-I. The contractor has been carrying out settlement monitoring at a frequency of not less than twice a year, and has been recording the settlement readings for each marker. There are 3 settlement markers in the vicinity of the Pet Garden (i.e. SM3, SM6, and SM9). From 2007 to 2011, the records of these settlement markers are tabulated as follow:</p> <div></div> <table><tr><th rowspan="2">Year</th><th colspan="3">Metres above Principal Datum for settlement markers (m)</th></tr><tr><th>SM3 (Outside Pet Garden)</th><th>SM6 (Inside Pet Garden)</th><th>SM9 (Outside Pet Garden)</th></tr><tr><td>Late 2007</td><td>20.886</td><td>27.582</td><td>17.002</td></tr><tr><td>Late 2008</td><td>20.885</td><td>27.573</td><td>17.000</td></tr></table>	Year	Metres above Principal Datum for settlement markers (m)			SM3 (Outside Pet Garden)	SM6 (Inside Pet Garden)	SM9 (Outside Pet Garden)	Late 2007	20.886	27.582	17.002	Late 2008	20.885	27.573	17.000
Year	Metres above Principal Datum for settlement markers (m)															
	SM3 (Outside Pet Garden)	SM6 (Inside Pet Garden)	SM9 (Outside Pet Garden)													
Late 2007	20.886	27.582	17.002													
Late 2008	20.885	27.573	17.000													

	Late 2009	20.876	27.564	16.997
	Late 2010	20.864	27.553	16.987
	Late 2011	20.850	27.542	16.977
	Settlement (m)	0.036 (i.e. 36 mm)	0.04 (i.e. 40 mm)	0.025 (i.e. 25 mm)
	Average settlement rate (m/year)	0.009 (i.e. 9 mm/year)	0.01 (i.e. 10 mm/year)	0.00625 (i.e. 6.25 mm/year)
	<p>According to the records above and the EPD's on-site observations, we have not noticed any unusual settlement in the Pet Garden vicinity and the rest of the TKOL-I during the restoration and aftercare period.</p> <p>According to our records, the EPD did not receive the topographical survey records from Consultant A, Contractor C, or the relevant departments that were conducted during the aforementioned period.</p>			
Q(h)	according to note 56 in paragraph 3.30, \$15.1 million contract sum comprised \$1.7 million for construction of the adjacent car park, which was provided by EPD. Please advise the final contract sum of the car park;			
	The Pet Garden development project included the Pet Garden itself and an adjacent car park, which was developed by the LCSD and the HAD. According to the LCSD and the HAD, the works contract of the development project did not provide a breakdown on the final construction cost of the car park.			
Q(i)	referring to paragraph 3.37, lessons learnt and remedy to be taken to address the ground settlement problem in the development of restored landfills in future;			
	As mentioned in paragraph 3.42 of the D of Audit's Report, the EPD will consider conducting a review on the ground settlement at TKOL-I when a new afteruse project is to be implemented at this site, in order to enable the project proponent to grasp the topographic and settlement conditions of the site as early as possible for the planning and design of the project. With the successive completion of various afteruse facilities at restored landfills, the EPD will, in the form of experience sharing, share the key points of afteruse development (e.g. differential settlement at the site area, maximum allowable loading, etc.) with relevant bureaux / departments and non-Government organizations, in order to facilitate their future afteruse developments.			
Q(j)	progress of conducting a review on the ground settlement at Tseung Kwan O Stage I Landfill and whether any unusual ground settlement has been observed (paragraph 3.42 refers). Has unusual ground settlement problem been observed at the other 12 landfills? If yes, please provide details.			
	As mentioned in our response to Q(g) and Q(i) above, according to the TKOL-I contractor's settlement monitoring data and the EPD's on-site observations, there was no unusual			

	<p>settlement found at the TKOL-I. Nonetheless, the EPD will consider conducting a review on the ground settlement at TKOL-I when a new afteruse project is to be implemented at this site for reference by the project proponent when planning and designing the project. For the rest of the 12 restored landfills, we have not observed any unusual settlement. The EPD will continue to monitor the ground settlement and will take immediate follow-up actions should there be any unusual settlement.</p>
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**Environmental Protection Department**  
**June 2018**



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15 June 2018

Mr Anthony Chu  
Clerk to Public Accounts Committee  
Legislative Council Secretariat  
Legislative Council Complex  
1 Legislative Council Road  
Central, Hong Kong

Dear Mr Chu,

**Public Accounts Committee**  
**Chapter 1 of Director of Audit's Report No. 70**  
**Management of restored landfills**

Thank you for your letter of 30 May 2018.

The supplementary information requested under Part IV of the follow-up action list is set out at **Enclosure** please.

Yours faithfully,

(Ms Eugenia CHUNG)  
for Director of Home Affairs

Encl.

## **Director of Audit's Report No. 70**

### **Chapter 1- Management of restored landfills**

#### **HAD's Response to the Public Accounts Committee**

#### **(IV) For the Home Affairs Department**

(a) with reference to Table 4 of paragraph 3.2, please explain and provide information on:

- (i) differences in role, division of work and responsibilities between EPD, LCSD and other departments which acted as the works agents in developing the seven recreational projects;

In the implementation of Wan Po Road Pet Garden, Ma Yau Tong West Sitting-out Area (SOA) and Ma Yau Tong Central SOA projects (items 2, 5 and 6 in Table 4), LCSD was the lead department and was responsible for awarding the works contracts on the advice on HAD. HAD was the project manager and administrator of the term consultant. EPD was the management authority of the restored landfills.

- (ii) factors and criteria when assigning which department as works agents for individual projects;

The District Minor Works (DMW) Programme funds district-based works projects approved and implemented by District Councils (DCs) costing up to \$30 million each (the current financial limit), to improve local facilities, living environment and hygienic conditions in the territory.

Under the DMW Programme, LCSD is the lead department in implementing minor works that are related to leisure, cultural, sports, soft landscaping works and recreation type of facilities (including pet garden). In general, ArchSD will be assigned as the works agent for projects in existing LCSD venues, while HAD (as project manager to oversee the term consultant) will be assigned projects in new LCSD venues if the projects meet the ambit and budget limits of DMW

Programme.

- (iii) relevant works agent for items 3, 4 and 7 sought funding approval from FC of LegCo after detailed design stage, which was different from projects under District Minor Works Programme (i.e. items 2, 5 and 6) in which funding was sought after feasibility study stage (Note 1 to the Table refers); the procedure and approval required for the change/increase in project cost;

The block allocation for District Minor Works Programme is provided under Subhead 7016CX – District Minor Works Programme of the Capital Works Reserve Fund. The allocation under this subhead is for District Councils to implement district-based works projects each costing up to \$30 million to improve local facilities, living environment and hygienic conditions in the territory. The Permanent Secretary for Home Affairs has been delegated with authority to authorise expenditure under Subhead 7016CX for projects costing up to \$30 million each, and the Director for Home Affairs and Director of Leisure and Cultural Services to authorise expenditure for projects costing up to \$20 million each.

In case an increase in the project estimate is required, they may also exercise authority to approve the increase in the project estimate provided that the applicable financial ceiling is not exceeded. The bureau or department proposing a project for funding allocation under the block allocation subhead has to prepare a submission to state the scope, cost and justification of the project. The officer exercising delegated authority would then consider the submission and grant approval only if satisfied that it is a justifiable use of public funds and a proper charge to the concerned block allocation subhead. If the project estimate is expected to exceed \$30 million, the approval of the Finance Committee will be required for such increase.

For projects in items 2, 5 and 6, the lead department was LCSD. To increase the approved project estimate (APE), LCSD would seek the views and agreement of the relevant District Council before seeking approval from the officer exercising delegated authority.

The projects in items 3 and 7 are under the purview of ArchSD and item 4 is under the purview of EPD. Please refer to the answers of the relevant departments.

#### Wan Po Road Pet Garden

- (b) workflow and procedures involved in determining the project scope and classification of the project under the District Minor Works Programme (paragraph 3.22 refers);

The following outlines the workflow of initiating project under DMW Programme involved:

1. The project proponent, either a DC member (as in the case of the Wan Po Road Pet Garden project) or a department, prepares project statement which includes the project scope, location, estimated cost, etc;
2. Under DMW Programme, LCSD is the lead department in implementing minor works for leisure, cultural, sports, soft landscaping and recreation type of facilities, and HAD is the lead department for projects such as walkway covers and rain shelters. The lead department will consider the technical complexity of the proposed project. In general, for projects with high technical complexity and/or more design elements, HAD or LCSD will assign them to the term consultant as the term consultant has the expertise to provide a greater variety of designs, as opposed to design work conducted in-house by Works Section of HAD;
3. Upon endorsement of the project by the relevant DC, the lead department will seek funding approval from the officer exercising delegated authority. After that, HAD will assign the project to the term consultant.

- (c) details regarding the selection, appointment and performance monitoring of the term consultant for the District Minor Works Programme, including the process of conducting the open expression-of-interest and shortlisting exercise for the consultancy service and whether the technical competence of the term consultant was taken into account in the selection exercise;

The process of selection and appointment of term consultant involves the following:

1. Invitation for expression of interest from the list of architectural consultants managed under Development Bureau's (DEVB's) purview;
2. Short-listing of interested consultants based on their submissions in response to the invitation for expression of interest and performance records of the consultants maintained by DEVB;
3. Invitation of short-listed consultants to submit Technical and Fee proposals; and
4. Award of the consultancy contract to the consultant with the highest overall score based on the Technical and Fee proposals. In the course of assessing technical proposal, the performance records of consultant maintained by DEVB will be taken into account.

The processes of performance monitoring of the term consultant involve the following:

- Regular management of the consultant by project managers, overseen by a senior architect and a chief engineer in HAD (Works Section) via written exchanges, meetings and interviews as appropriate.
- The execution of a three-tier system in performance monitoring which includes (i) Monthly progress meeting chaired by the senior architect; (ii) Quarterly Project Review meeting chaired by the chief engineer; and (iii) Quarterly Consultant Review Committee meeting chaired by an Assistant Director. The performance of term consultant will be rated and submitted quarterly to the Consultants' Performance Information System of DEVB which is an online system available to Government departments intending to engage consultants in the lists under the purview of DEVB.

- (d) given the technical complexity involved in developing restored landfills which were different from other sites, justifications for adopting a term contract for the project and whether technical advice was sought from EPD regarding site conditions, development constraints and possible mitigation measures before appointing Consultant A to provide consultancy services for the project, if yes, details of the advice sought and if no, reasons why not;

Consultant A was appointed by HAD in February 2007 as one of the pilot term consultants to carry out DMW projects in Sai Kung District for DMW projects commenced in the period from 27 February 2007 to 26 February 2008. Accordingly, Consultant A was assigned to implement relevant

DMW projects endorsed by SKDC to be carried out under the term consultancy approach during the period, including the Wan Po Road Pet Garden which was endorsed by SKDC in June 2007. EPD had no role to play in the appointment of term consultant and the assignment of projects to term consultant.

- (e) details on the calculation of consultancy fee under a term contract using the Wan Po Road Pet Garden as an illustration, and in what ways did HAD monitor the consultant's management of the project cost (Note 45 of paragraph 3.23 refers);

The consultancy fee is calculated based on the actual construction cost of the project multiplied by the proposed percentage fee submitted in the awarded tender by the consultant. For the pet garden project, the construction cost is \$22.7 million and the percentage fee is 6.8%, which was the percentage proposed by Consultant A in their Fee proposal. The consultancy fee is about \$1.54 million (i.e. \$22.7 million x 6.8%).

Project cost is affected by the project scope (i.e. what items of works are to be included in the project) and the prevailing pricing of the works involved. There is an established mechanism to control the project scope and ensure a competitive pricing for works through open selection of contractor -

1. in the case of Wan Po Road Pet Garden, the project scope was vetted by the lead department and endorsed by the DC. HAD, as the project manager overseeing the term consultant, provided professional advice to LCSD in vetting the project scope. Moreover, any additional work after the award of contract had to be endorsed by DC and approved by the relevant authority in the Government. HAD also gave professional advice to LCSD on any proposed additional work during the construction stage. In short, Consultant A could not vary the project scope or instruct the contractor to carry out additional work without the prior approval of DC, the lead department and the relevant authority in the Government;
2. In the case of Wan Po Road Pet Garden, an open tender exercise was conducted for the works contracts to ensure a fair, open and competitive selection process. The lowest returned tender was accepted. The

construction cost is therefore determined by the price in the returned tender for the works contract.

- (f) information regarding duration of the term consultancy of Consultant A, whether there were any estimates on (i) the number of projects to be included in the term consultancy, and (ii) consultancy fee for each project. If yes, the basis for these estimates;

The duration of consultancy of Consultant A under the pilot scheme was one year from 27 February 2007 to 26 February 2008. According to the Agreement, HAD could assign projects to Consultant A upon request by the lead departments during the one-year term but consultant A was required to see through the project to completion which might span over one year, as in the case of the Wan Po Road Pet Garden project. There was no limit to the number of projects to be assigned to Consultant A. At the time of inviting proposals for the term consultancy, there was no estimate on the number of projects to be included in the consultancy.

As explained in (e) above, the consultancy fee is 6.8% of the actual construction cost of the assigned projects. This is the percentage proposed in the returned tender.

- (g) procedures for funding approval of a project under a block vote for the District Minor Works Programme and in case of an increase in the approved project estimate, procedures and authority for vetting and approval of the increase in cost;

Please refer to the reply to question (a)(iii).

- (h) according to paragraphs 3.26(a) and (b) and 3.27(c), EPD reminded Consultant A of the need to conduct an updated topographical survey in 2007 and that as a standard practice, consultants would conduct such a survey before works design to verify all site levels, dimensions or alignments shown on contract drawings before commencement of works. It was only until April 2009 that Consultant A conducted the topographical survey, which showed a

difference in site level of 0.7 metre at one of the surveyed points. Please explain and provide the following information:

- (i) average cost and time required for conducting a topographical survey;

The cost of such surveys varies according to the size, topography, accessibility, etc. of the site. The current cost for topographical surveys of DMW projects is generally below \$100,000. Normally, it takes several weeks including field work and preparation of reports.

- (ii) any guidelines issued by the Government on the number and location of survey points chosen in a topographical survey. If no, the basis for a consultant to choose the number and locations of survey points;

There are no standard guidelines on the number and location of survey points but the topographical survey shall cover adequately the existing ground levels and features within the site. It should be noted that the crux of the issue in the subject site was not about adequacy of the number of survey points, but continuous settlement of the site.

- (iii) reasons of not conducting a topographical survey before commencement of works design despite the reminder from EPD;

HAD could not trace any record of EPD reminding Consultant A of the need to conduct an updated topographical survey in 2007. Nevertheless, it is HAD's standard practice to conduct a topographical survey for all SOA (including pet garden) projects after funding approval. This standard practice was followed in the case of Wan Po Road Pet Garden project. The conceptual design in the feasibility report, which was a desktop study, was based on the record from EPD. Once the funding for the project was approved in April 2009, Consultant A engaged a land surveyor to carry out the topographical survey in the same month to verify the viability of the conceptual design.

It should be noted that, in the case of Wan Po Road Pet Garden project, even if topographical survey were conducted earlier than April 2009, it would not have obviated the need to revise design during the construction stage, because further settlement had taken place during the design stage and tendering stage, as revealed by the topographical survey conducted



by Contractor C between January to March 2011.

- (iv) reasons for HAD to allow Consultant A to deviate from the standard practice;

The standard practice is to carry out topographical survey for all SOA (including pet garden) projects after funding approval. Once the funding for the project was approved in April 2009, Consultant A engaged a land surveyor to carry out the topographical survey in the same month to verify the viability of the conceptual design. The standard practice was followed in the case of Wan Po Road Pet Garden Project. There was no deviation from the standard practice.

- (v) whether HAD had informed EPD and/or other departments after knowing the considerable site level difference and sought technical advice on remedy or mitigation measures; if yes, details; and if no, reasons why not;

Based on the site levels obtained in April 2009, Consultant A tackled the issue of site level differences by revising the design. HAD could not trace from record about communication with EPD on site settlement after the topographical survey.

In August 2009, Consultant A, HAD and EPD conducted a joint site visit for clarification of various site issues. Discrepancies of the existing drainage system were clarified and updated drainage drawings were provided to HAD by EPD.

- (i) according to paragraph 3.27(e), topographical survey results in March 2011 showed a significant difference in site levels of 1.59 metres as compared to the site levels recorded in 2009. Please explain and provide the following information:

- (i) details of the topographical survey(s) conducted by Consultant A, including when the survey(s) was/were conducted, the number and location of the survey points and findings;

Consultant A engaged a land surveyor to carry out the topographical survey in April 2009 (Appendix 1 refers) during the design stage. In

addition, Consultant A included in the works contract a requirement for the works contractor (Contractor C) to carry out a topographical survey to verify the site levels before construction. Contractor C conducted the survey in March 2011 (Appendix 2 refers). The comparison of record provided by EPD in 2007 and the surveys by Consultant A and Contractor C is at Appendix 3.

- (ii) whether HAD has conducted or instructed Consultant A to continuously monitor the ground settlement after knowing that the site was susceptible to ground settlement problems between April 2009 and March 2011; if no, reasons why not;

Consultant A conducted a topographical survey in April 2009. With the agreement of HAD, Consultant A included the additional requirement in the works contract for Contractor C to carry out a topographical survey before construction in order to ensure that the design of the Pet Garden would fit the latest site conditions.

- (iii) measures taken by HAD in response to the ground settlement problem of the site and in anticipation of the delay in project completion;

The inclusion of the additional requirement for topographical survey in the works contract is one of the measures taken in response to the special condition of the project site being a restored landfill site. In anticipation of the delay in project completion, HAD had issued warning letters to Consultant A and urged the latter to expedite the revision of design and to supervise the project progress with due diligence.

- (j) with reference to paragraph 3.30, a breakdown of the estimated project cost of \$9.6 million and the assumptions made;

With assumptions based on the scope of works stated in the feasibility study report, the breakdown of the estimated project cost is as follows:

1. Excavation	\$0.60 million
2. Building works	\$2.30 million

3. Building services works	\$3.00 million
4. Landscape works	\$1.79 million
5. Preliminaries	\$1.16 million
6. Contingency	\$0.77 million
<b>Total</b>	<b>\$9.62 million</b>

- (k) experiences/lessons learnt from the development of the project on the necessity to employ quantity surveyor in estimating the cost of project components in future (paragraph 3.31 (a) refers);

Since April 2008, HAD has engaged an independent Quantity Surveyor for all term consultancy agreements to provide comprehensive advice on cost items and control, including the updating of the latest project cost estimates at each work stage, working out the pre-tender estimates and post-contract valuations in the case of variation of works order during the construction stage.

- (l) reasons why only three months were allowed for the tender stage, which would normally take six months to complete (paragraph 3.31 (c) refers);

Consultant A had under-estimated the time needed for tendering process of government projects.

- (m) according to paragraphs 3.33(b) and 3.35, \$3.2 million were related to additional works items requested from SKDC and in July 2008, the Development Bureau informed FC of the Administration's objective to contain the need for changes to user requirements to those that were absolutely essential and necessary to prevent cost overrun. Please provide the following information:

- (i) measures taken by HAD/LCSD to minimize the need for changes in users' requirements for budgetary control and steps taken by HAD/LCSD to communicate with SKDC of the Administration's intent above;

HAD required the Consultant to obtain comments from the lead

department and other relevant departments to ensure all user requirements were captured at each stage and fully incorporated in the tender documents, such that late changes were contained as far as possible. Any proposed additional works would also be vetted by HAD and endorsed by the DC and the lead department.

- (ii) reasons for the additional works requests from SKDC during construction stage and justifications to demonstrate that they were absolutely essential and necessary;

The main reason for the additional works requested by SKDC was to suit future operational needs. In the beginning, it was proposed that the Pet Garden would be open from 7:00 hours to 18:00 hours or 19:00 hours only. It is now opened until 9:00 pm, with lighting provided until 9:30 pm. Please also refer to reply to question (m)(iii) below.

- (iii) discussion details, including dates of meetings and discussion summary, between LCSD/HAD and SKDC on providing lighting at the Pet Garden;

1	May 2008	The District Works Working Group of the District Facilities Management Committee (DFMC) under the SKDC discussed and supported the proposed facilities and project estimate of \$11 million for the proposed facilities. Having considered the potential problem of light pollution and the views of residents of the nearby Oscar by the Sea, Members agreed that the facilities should be open during day time only. Apart from the emergency lighting at the entrance, there would not be any lighting facility.
2	April 2012	LCSD submitted the papers titled “The management and mode of operation of the pet garden at Wan Po Road, Tseung Kwan O” for the discussion of the DFMC of SKDC. It was proposed that from September every year to April of the next year, the pet garden would be open from 07:00 hours to 18:00 hours; whereas from May to August every year the opening hours would be from 07:00 hours to 19:00 hours. Members endorsed the

		arrangement. Nevertheless, the DFMC suggested that LCSD should review the usage pattern of the Pet Garden 3 months after its opening and look into the feasibility of extending the opening hours of the garden to night time having regard to general users' comments.
3	October 2012	The District Works Working Group of the DFMC under the SKDC discussed and endorsed the revised project estimate of \$21 million. Amongst the additional facilities, there was provision for installation of underground cabling. The provision was to cater for the need for lighting at the sitting-out area if it were to be opened at night in future.

- (n) according to paragraph 3.36, LCSD identified the technical difficulties in handling the project and that HAD's Works Section was unable to provide expert advice and timely assistance due to limited resources; number of staff in HAD's Works Section, their titles, ranks and profession, number of projects supervised by the Section during the period of developing the project. When was HAD aware of LCSD's above comments and follow-up actions taken by HAD in this regard;

HAD could not trace from record about communication with LCSD regarding resources issue in 2013. HAD only came to know about the comments from the Audit Report.

During the period of developing the pet garden project from 2008 to 2013, HAD Works Section had increased the number of project managers (architects) to 7, who were overseen by a senior architect and a chief engineer to manage the projects assigned to term consultants. The number of DMW projects handled by the term consultants during the period was 354 with a total project value of some \$850 million.

- (o) referring to paragraph 3.37, lessons learnt and remedy to be taken to address the ground settlement problem in the development of restored landfills in future;

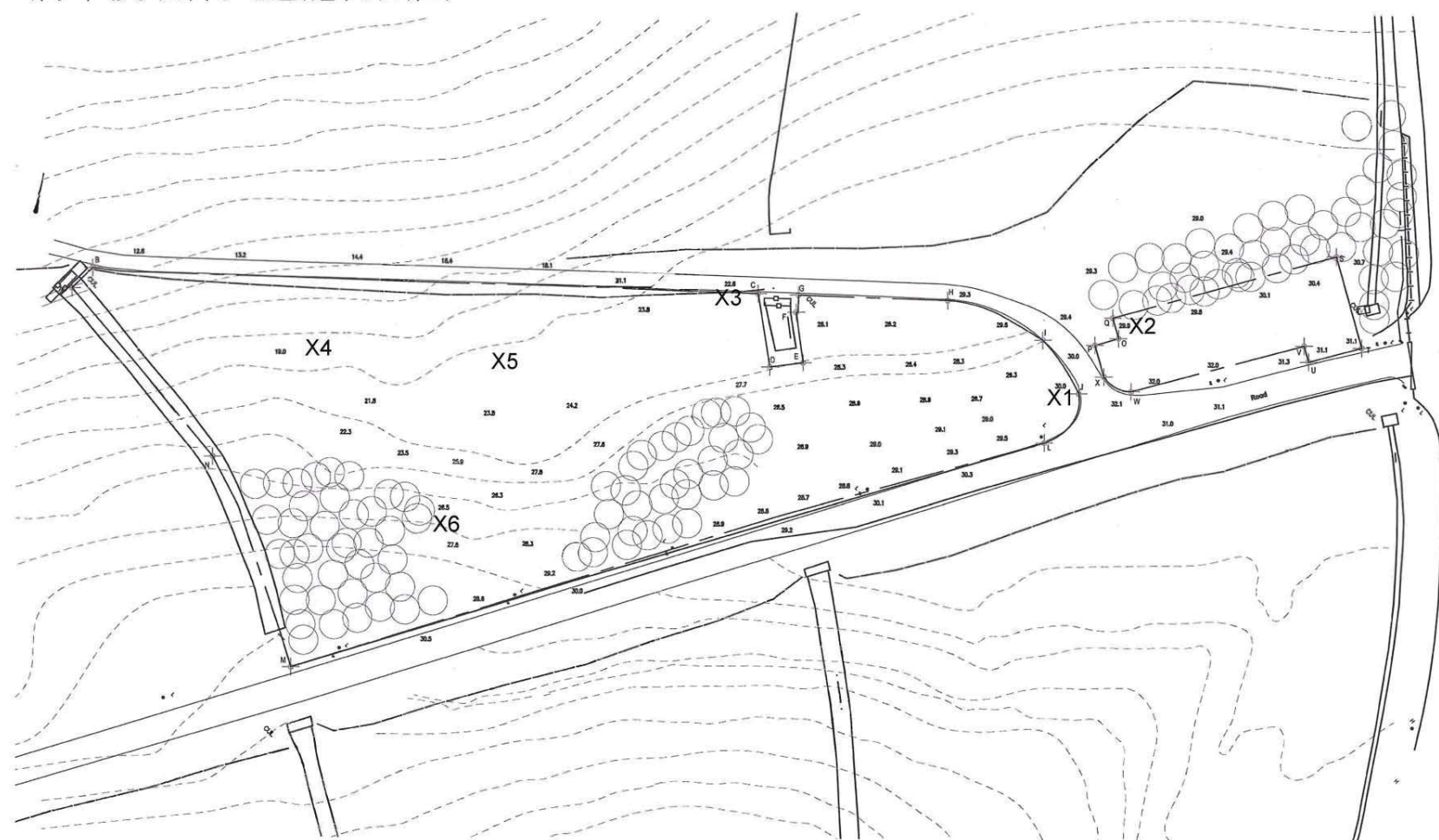
For future works projects involving restored landfills or sites susceptible to ground settlement, HAD will seek expert advice from EPD in the course of implementing project, just as in the case of Wan Po Road Pet Garden project. Also, where time and resources permit, we would recommend consultants to ascertain up-to-date site conditions for design work before tendering (particularly in situations where ground settlement has already been observed in a topographical survey carried out by a consultant at an early stage and where the design stage takes a longer duration).

- (p) given the complexity of works involved, does HAD have the relevant expertise and experience to assume the role of works agent for developing the Pet Garden, and the appropriateness of including the project under District Minor Works Programme from project management perspective.

In general, HAD is capable of conducting minor works costing not more than \$30 million. As works agent, HAD has also developed a number of pet garden projects under the DMW Programme in various districts since 2008. Drawing from the experiences of Wan Po Road Pet Garden project, we note that carrying out works project on restored landfill site requires special attention, as the site may be susceptible to settlement and there are other issues such as different utilities below the surface. While we had already sought expert advice from EPD in the course of implementing the project in view of the special conditions of restored landfills site, we consider that the extent of settlement at the project site of Wan Po Road Pet Garden during the design and tender stage was unusual and should have posed challenges to any works agents.

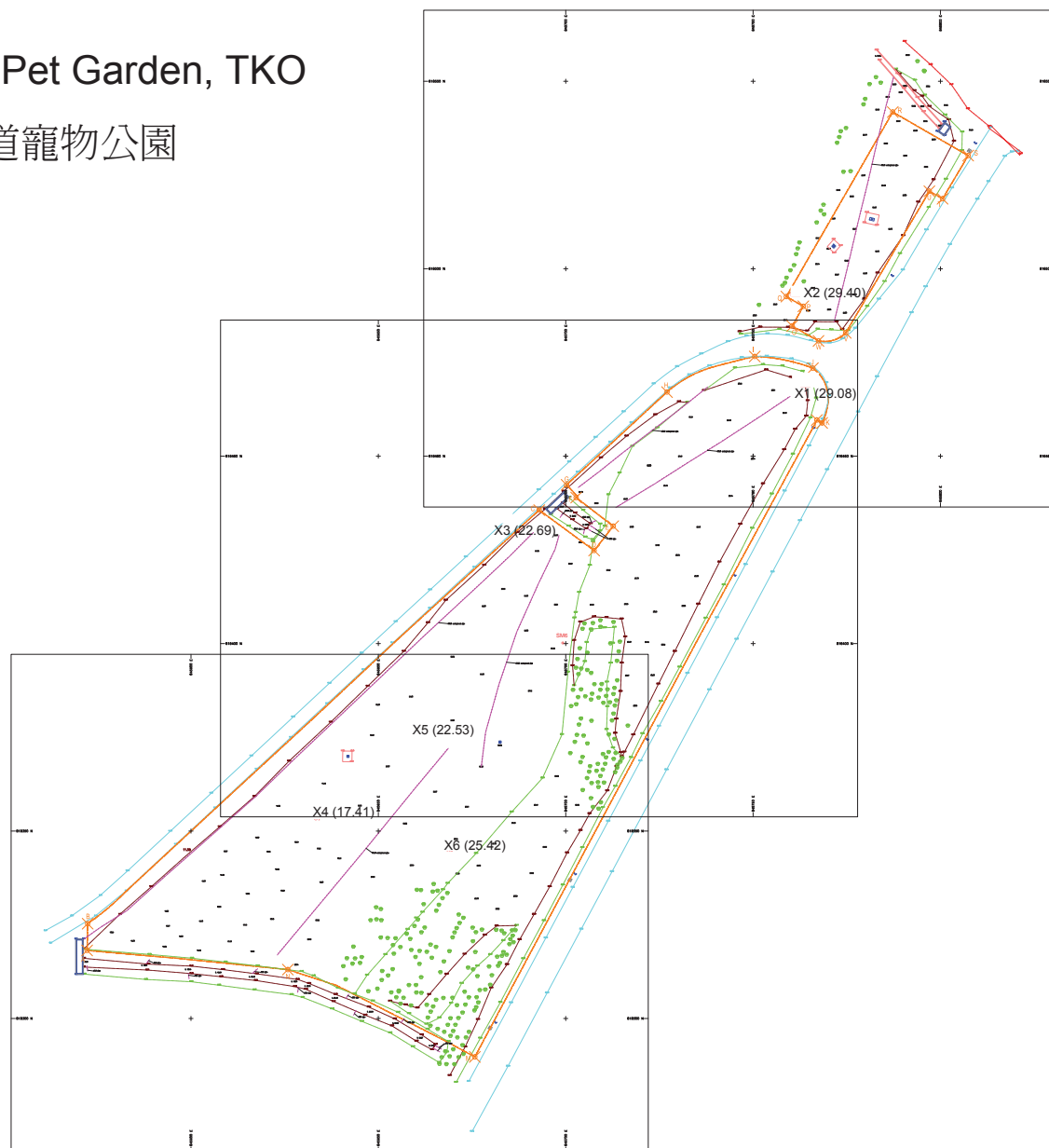
## Wan Po Road Pet Garden, TKO

## 將軍澳環保大道寵物公園



# Wan Po Road Pet Garden, TKO

將軍澳環保大道寵物公園

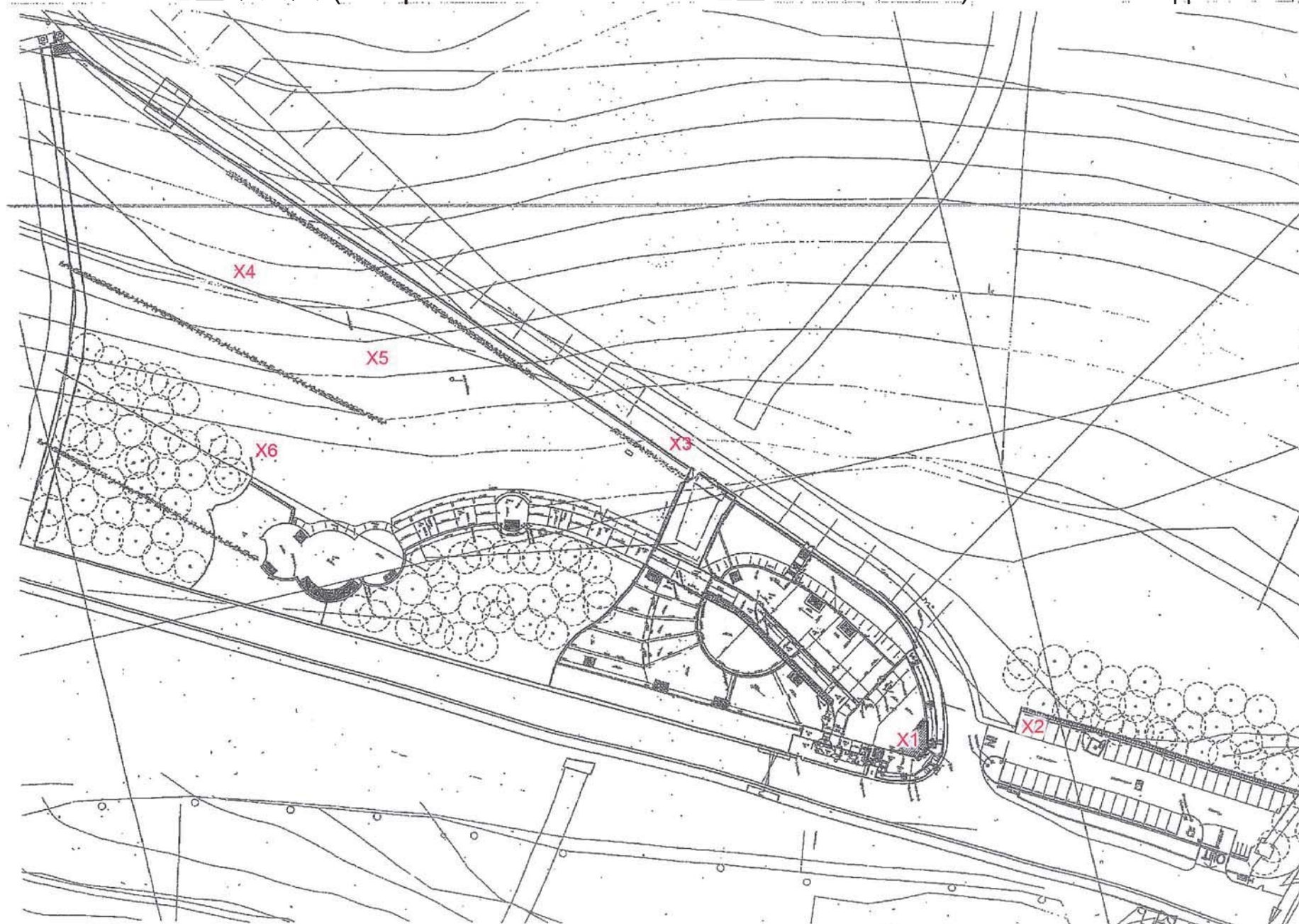


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Topographical Survey conducted by Contractor in 2011

於2011年由承建商安排的地形測量圖





Wan Po Road Pet Garden, Tseung Kwan O 將軍澳環保大道寵物公園

## Comparison of site levels at Wan Po Road Pet Garden, Tseung Kwan O

### 將軍澳環保大道寵物公園地面水平對比

Stage	Site Levels* 地面水平*					
	X1 (near the main entrance 近地盤入口) (m above Principal Datum 主水平基準以上 米)	X2 (at Car park 於停車場) (m above Principal Datum 主水平基準以上 米)	X3 (m above Principal Datum 主水平基準以上 米)	X4 (m above Principal Datum 主水平基準以上 米)	X5 (m above Principal Datum 主水平基準以上 米)	X6 (m above Principal Datum 主水平基準以上 米)
1. <b>Feasibility Stage:</b> Survey plan provided by EPD in 2007 可行性階段: 測量圖由環保署於 2007 年提供	+30	+30	+23.5	+19	+24	+27
2. <b>Design Stage:</b> Topographical Survey by Consultant A in April 2009 設計階段: 2009 年四月由顧問 A 安排地形測量圖	+30	+29.9	+22.8	+19	+23.8	+26.5
3. <b>Construction Stage:</b> Topographical survey by Contractor C in March 2011 施工階段: 2011 年三月由承建商 C 安排地形測量圖	+29.08	+29.4	+22.69	+17.41	+22.53	+25.42
4. Settlement between Feasibility Stage and Design Stage 可行性階段與設計階段沉降比較 (2) - (1)	0.0	0.1	0.7	0.0	0.2	0.5
5. Settlement between Design Stage and Construction Stage 設計階段與施工階段沉降比較 (3) - (2)	0.92	0.5	0.11	1.59	1.27	1.08
6. Settlement between Feasibility Stage and Construction Stage: 可行性階段與施工階段沉降比較 (3) - (1) <b>Overall Settlement 整體沉降</b>	<b>0.92</b>	<b>0.6</b>	<b>0.81</b>	<b>1.59</b>	<b>1.47</b>	<b>1.58</b>

\*Refer to Site Plan for the locations of the measurement points 測量點位置可參考地盤平面圖



康樂及文化事務署  
Leisure and Cultural Services Department

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本署檔號 OUR REF: ( ) in LCSD/4-35/28C Pt. 2  
來函檔號 YOUR REF: CB4/PAC/R70

19 June 2018

Mr Anthony Chu  
Clerk to Public Accounts Committee  
Legislative Council Secretariat  
Legislative Council Complex  
1 Legislative Council Road  
Central, Hong Kong

Dear Mr Chu,

**Public Accounts Committee**  
**Consideration of Chapter 1 of the Director of Audit's Report No. 70**  
**Management of restored landfills**

As requested in your letter dated 30 May 2018, our response is set out in the Appendix (English translation) for reference.

Yours sincerely,

(Simon LIU)  
for Director of Leisure and Cultural Services

**Public Accounts Committee  
Consideration of Chapter 1 of the Director of Audit's Report No. 70  
Management of restored landfills**

**(I) For the Leisure and Cultural Services Department**

- (a) according to Note 39 of paragraph 3.2 (all paragraph numbers mentioned hereinafter refer to the paragraph number of the Audit Report), details regarding the "sub-allocation" arrangement between the Environmental Protection Department ("EPD") and the Leisure and Cultural Services Department ("LCSD"), including the role, division of work and responsibilities between the two departments in each of the design, construction and operation periods of the recreational facilities at restored landfills. Given the special nature of restored landfills which warrants special attention in developing the sites, whether EPD had provided technical advice to LCSD and other departments which acted as the works agent. If yes, details and records of the advice given regarding the seven sites in Table 4 of paragraph 3.2;

**Capital Works Projects**

Among the 7 projects mentioned in Table 4 of paragraph 3.2, Kwai Chung Park (item 1), Jordan Valley Park (item 3), Sai Tso Wan Recreation Ground (item 4) and Ngau Chi Wan Park (item 7) were capital works projects. During the design and construction stages, LCSD as the client department was mainly responsible for providing user requirements of the proposed projects to the works agent and/or its consultant/contractor for design and construction works and to seek funding for implementation of the projects.

**District Minor Works (DMW) Projects**

The remaining three projects, including Wan Po Road Pet Garden (item 2) (excluding the adjacent car park), Ma Yau Tong West Sitting-out Area (item 5) and Ma Yau Tong Central Sitting-out Area (item 6) were DMW projects. During the design and construction stages, LCSD as the lead department was mainly responsible for working with the respective District Councils (DCs) in implementing the DMW projects, issuing the Letter of Acceptance to the successful tenderer upon advice from Home Affairs Department (HAD) and for seeking funding for implementation of the projects, etc.

Irrespective of the type of projects, LCSD as the user department during the operation stage is responsible for venue management.

EPD is the management department for restored landfill sites. EPD will provide information and technical advice to LCSD in respect of planning, design and construction of the proposed works projects. Please make reference to EPD's reply for details.

**(b) with reference to Table 4, please explain and provide information on:**

**(i) differences in role, division of work and responsibilities between EPD, LCSD and other departments which acted as the works agents in developing the seven recreational projects;**

Please refer to the reply in (a) above.

**(ii) factors and criteria when assigning which department as works agents for individual projects;**

For capital works projects, ArchSD will normally be LCSD's works agent.

As for DMW projects, as a general principle, the works agent is determined as follows –

- ArchSD is responsible for works at existing LCSD venues;
- Architect-led term consultants and quantity surveying (QS) term consultants engaged by HAD are responsible for LCSD-led projects at new sites.

**(iii) relevant works agent for items 3, 4 and 7 sought funding approval from Finance Committee ("FC") of Legislative Council ("LegCo") after detailed design stage, which was different from projects under District Minor Works Programme (i.e. items 2, 5 and 6) in which funding was sought after feasibility study stage (Note 1 to the Table refers); the procedure and approval required for the change/increase in the project cost;**

Items 2, 5 and 6 in Table 4 were projects under the block allocation for District Minor Works Programme under the Sub-head 7016CX of Capital Works Reserve Fund. The allocation under this subhead is for DCs to implement district-based works projects each costing up to \$30 million to improve local facilities, living environment and hygienic conditions in the territory. The Permanent Secretary of Home Affairs has been delegated with authority to authorise expenditure under Subhead 7016CX for projects costing up to \$30 million each, and the

Director for Home Affairs and Director of Leisure and Cultural Services to authorise expenditure for projects costing up to \$20 million each. In case an increase in the project estimate is required, they may also exercise authority to approve the increase in the project estimate provided that the applicable financial ceiling is not exceeded. If the project estimate is expected to exceed \$30 million, the approval of the Finance Committee will be required for such increase. The bureau or department proposing a project for funding allocation under the block allocation subhead has to prepare a submission to state the scope, cost and justification of the project. The officer exercising delegated authority would then consider the submission and grant approval only if satisfied that it is a justifiable use of public funds and a proper charge to the concerned block allocation subhead.

Items 3, 4 and 7 in Table 4 were capital works projects. For capital works projects, the procedures and approvals required for change/increase in the project costs would follow the previous Financial Circular No. 11/2004, i.e. SFST may approve, under delegated authority from FC of LegCo, minor changes to project scope or increase in Approved Project Estimate (APE) which does not exceed \$15 million. Any increase in APE exceeding \$15 million must be submitted to FC of LegCo for approval.

- (c) **is there a standing mechanism for LCSD, Home Affairs Department ("HAD") and the Architectural Services Department ("ArchSD") to inform EPD of the progress of the development of recreational projects at restored landfills and findings of the studies and surveys conducted on the landfills by the consultants/contractors commissioned by these departments. If yes, details, including when and what information has been conveyed to EPD;**

There is no standing mechanism for LCSD to inform EPD of the progress of the development of recreational projects at restored landfills. Given the complexity of the landfill sites, however, LCSD may seek advice from EPD from time to time during planning and implementation of the projects wherever necessary.

## **Kwai Chung Park**

- (d) using Kwai Chung Park as an illustration, involvement of relevant government bureaux/departments, relevant District Councils ("DCs") and local communities in each of the design, construction and operation stages of developing restored landfills and procedures on seeking funding approval for the project;**
- (e) LCSD's standard workflow in planning recreational facilities such as Kwai Chung Park, and provide any papers/studies prepared/conducted by LCSD on the usage of Kwai Chung Park;**

A combined reply is given for items (d) and (e) as follows:

In planning capital works projects for recreational and sports facilities, LCSD will normally review the provision and usage of existing facilities in the district, local demand and take into account the recommendations of the Hong Kong Planning Standards and Guidelines, and then draft the scope of works. Apart from obtaining internal approval within the department, initial comments from HAB will be sought and the DC will also be consulted. After securing support from the DC on the proposed facility, LCSD will prepare a Project Definition Statement (PDS) for HAB's consideration and issuance to ArchSD for conducting a technical feasibility study and preparing a Technical Feasibility Statement in accordance with the established procedures for capital works projects. Upon completion of the Technical Feasibility Statement, ArchSD may, pursuant to established procedures, carry out various technical assessments and start working on the preliminary design for the project, so that the Government may apply for funding to take forward the project. In the planning stage, LCSD will from time to time consult relevant works departments, such as ArchSD, wherever necessary. If the site involves a restored landfill, EPD will also be consulted. .

Taking the planning for the golf driving range in Kwai Chung Park as an example, LCSD had considered the recommendations of the District Facilities Management Committee (DFMC) of Kwai Tsing District Council (KwTDC) and consulted EPD on the proposed facility. Subsequently, LCSD consulted DFMC on the proposed facilities including the golf driving range in the development of Kwai Chung Park. Please refer to **Annex 1** for the consultation paper for the DC.

- (f) LCSD stated that it agreed with and had stepped up efforts to follow up audit recommendations contained in the Director of Audit's Report No. 60 in 2013 by devising an action plan for future development of the**



**Kwai Chung Park (paragraphs 3.5 and 3.14 (d) refer); a chronology listing the actions set out in the action plan, actions which had subsequently been taken and the length of delays, if any, with explanation;**

Since the publication of Report No. 60 of the Director of Audit by the Audit Commission in March 2013, LCSD has been actively following up with the audit recommendations with a view to putting the Park into gainful use as soon as practicable, and exploring alternative options for future development of the site.

LCSD consulted the DFMC of KwTDC in June and December 2013 on the development of Kwai Chung Park. DFMC gave consent to the development of recreation and sports facilities, including a natural turf cricket cum football pitch, a golf driving range with 30 golf driving bays, a landscaped garden, a jogging trail, a fitness corner, a children's playground, a community garden and a pet garden, on the site. On this basis, LCSD started planning work and prepared a PDS for approval by HAB. In May 2014, HAB issued the PDS to ArchSD, for engaging the latter to conduct technical feasibility study to ascertain the technical feasibility of constructing the proposed facilities on the restored landfill.

There are constraints in developing the Park as it is located on a restored landfill. Challenges include the presence of a number of trees, rough topography and slopes within the site, as well as facilities such as a leachate management system and a landfill gas management system at the landfill site. There are also various technical issues that require special handling in developing a restored landfill site. For instance, the land cannot support heavy structures and the proposed facilities shall have no interruption to the routine aftercare work and monitoring of gas detectors installed underground by EPD contractors. Given the special conditions of the site, there are bound to be limitations in the development of recreation and sports facilities. In July 2014, ArchSD informed HAB and LCSD that due to the site limitations, the site could not physically accommodate the proposed golf driving range. Given the proposed golf driving range will take up a vast area, the proposed project scope had to be revised.

In order to put the Park into gainful use as early as practicable, HAB had focused on following up the land use application for temporary cricket grounds on a short term basis since early 2015, including giving policy support and co-ordinating related issues. In March 2016, EPD granted a three-year Government Land Licence to Licensee A for the use of about 4.5 ha of relatively flat area in "Kwai Chung Park" to develop temporary cricket grounds. During this period, LCSD worked with HAB and EPD on the relevant matters. On 23 September 2015, LCSD and Licensee A gave a



detailed briefing on the proposal of developing temporary cricket grounds to DFMC of KwTDC, and secured consent from DFMC regarding the proposal.

In November 2016, LCSD reported the progress of the project of “Kwai Chung Park” to the KwTDC and explained the technical limitations in details to the members. After the DC learnt that the site could not accommodate all the proposed facilities due to various technical difficulties, it agreed it was necessary to take out some facilities and that a working group should be formed to follow up the revision of the proposed facilities.

The working group convened its first meeting on 22 December 2016 to discuss the future development of Kwai Chung Park. LCSD and departments concerned subsequently arranged a site visit for all members of the KwTDC to the area of development in Kwai Chung Park in January 2017 to gauge their opinions, so that the planning work could proceed as soon as possible. Subsequently, LCSD further consulted the members on the proposed facilities of the Kwai Chung Park project at meetings of the working group.

Finally, LCSD and members of the working group discussed the proposed facilities and estimated programme of the project in further details at the working group meeting on 4 September 2017. After discussion, members of the working group expressed support for the project scope and the proposed facilities of the Kwai Chung Park and agreed that the “Kwai Chung Park” will be implemented by phases. For further information on development and details, please refer to paragraph (o)(iv) below.

**(g) according to Note 2 to Table 4, details on the technical advice given by ArchSD to LCSD on the Kwai Chung Park project, such as when the advice was given and a brief description of the advice;**

ArchSD provided advice to LCSD on 5.12.2017 and 15.2.2018 on the technical aspects of the Kwai Chung Park. Major items are as follows -

- Landfill Gas Hazard Assessment (LGHA) will be required to be submitted to the EPD for endorsement.
- In view of the site constraints, functional areas and spaces would be fragmented and induce security and management problem in this regard.
- Large areas of slopes would limit development area and increase maintenance cost.
- Widespread gas monitoring wells in the site will restrict the proposed project development.
- LCSD to reconsider incorporating other relatively flatland into the site

e.g. BMX Park / Temporary Cricket Ground for better planning of use, and to address EPD's views, or to review the site area by confining it to the flatland / gentle slope areas.

- (h) apart from ArchSD, has LCSD consulted other departments on the development of the Kwai Chung Park. If yes, list out the dates and issues consulted;**

In addition to ArchSD, LCSD had consulted EPD on various development options. For example, LCSD consulted EPD in 2001 and 2013 about the development of the football training centre and the golf driving range respectively. Please refer to EPD's replies for details of their views.

- (i) with reference to Appendix G, elaboration on the site constraints mentioned in item 10 and reasons for not pursuing the options mentioned in items 11 (a) to (e); whether any studies, such as technical feasibility study or landfill gas hazard assessment had been conducted to clearly identify and define the scope and extent of the site constraints and other reasons as mentioned in items 10 and 11, any advice sought from ArchSD, EPD and/or external consultants for tackling these constraints and whether LCSD has reviewed in or around 2009 the lessons learnt for future development of the Park. If yes, please provide any written records indicating the results of such review(s);**

There were various site constraints for the proposal of the construction of a football training centre at the proposed Kwai Chung Park site (item 10 of Appendix G), mainly as follows :

- the orientation of the football pitch proposed in the design did not meet the requirement of the Federation Internationale de Football Association/Hong Kong Football Association for standard football pitches;
- with its size limited by the surrounding environment and slopes, the site could not accommodate a standard 11-a-side football pitch with adequate safety margin;
- it might not be feasible to provide the pitch with floodlights as it would involve the construction of at least 4 heavy lighting columns with deep foundation, which would probably disturb the underlying geomembrane capping;
- irregular differential settlement was detected at the site; and
- technical difficulties in slope treatment.

The options mentioned in items 11(a) to (e) of Appendix G were not pursued

mainly due to the following: the project site stood on a restored landfill, a large area of which was covered by slopes, leaving little usable area; the entire stretch of land was covered in a capping layer and installed with facilities such as landfill gas collection pipes, gas extraction wells and leachate collection pipes, which posed challenges to the design of the venue and construction of superstructures. Another factor for consideration was the availability of resources at the time. In fact, LCSD had considered partial opening of Kwai Chung Park. However, as the facilities of the Park were built a long time ago, some of them were rather dilapidated, not meeting the prevailing safety standards. Hence, the possibility of repairing and enhancing these facilities as minor works projects was examined so as to facilitate the partial opening of the Park. These proposed projects were, however, shelved due to the high cost involved, which would probably exceed the funding ceiling for minor building works. For details, please refer to **Annex 2**.

LCSD put on hold the planning work for the development of Kwai Chung Park in 2010. As the planning work was resumed in 2013, LCSD reviewed the past development of Kwai Chung Park, the provision and usage of existing facilities in the Kwai Tsing District, the district needs and the advice of the KwTDC. LCSD then proposed development of a natural turf cricket cum football pitch, a golf driving range, a landscaped garden, a jogging trail, a fitness corner, a children's playground, a community garden and a pet garden and sought the views of the policy bureau. The proposal was supported by DFMC.

- (j) **whether the Administration would consider that, for future development of restored landfills, it would be beneficial to hire a consultant to conduct a comprehensive feasibility study, recommend mitigation measures and propose a list of development options for consideration by EPD/LCSD, DCs and local communities so as to speed up the development process;**

Under the established mechanism for capital works projects, the client department may seek technical advice from relevant works departments regarding the project scope during the pre-planning stage wherever necessary. When considering whether, for future development of any restored landfills, it would be beneficial to hire a consultant to conduct a comprehensive feasibility study, recommend mitigation measures and propose a list of development options before the issuance of the PDS so as to speed up the development process, as additional resources will be required for hiring a consultant, LCSD will consider the need on a case-by-case basis by assessing the project scale and resources required with reference to past experiences, and seek technical advice from ArchSD and EPD according to

the established mechanism of capital works projects.

**(k) according to paragraph 3.6, LCSD proposed a project scope including a golf driving range with 30 golf driving bays for the KwTDC's consideration. Please provide the following information:**

**(i) the workflow for LCSD to make a proposal on a golf driving range;**

After reviewing the past development of Kwai Chung Park, the provision and usage of existing facilities and the needs of Kwai Tsing District, and the views of the DC, LCSD would conduct a preliminary assessment and obtain internal approval for the proposed facilities. LCSD would then seek views and support from the policy bureau, and officially consult the DC for their views on the proposed facility (including the golf driving range proposed by DFMC). After securing support from the DC for the proposed facilities, LCSD would prepare a PDS in accordance with the established procedures for capital works projects for HAB's consideration and issuance to ArchSD for engaging the latter to conduct the technical feasibility study and prepare a Technical Feasibility Statement.

**(ii) justifications for putting forward the proposal and whether any study had been conducted or any advice had been sought from ArchSD, EPD and/or consultant on this proposal before submitting it to KwTDC;**

LCSD had considered the following factors before submitting the proposal:

- During the consultation process with KwTDC, at a meeting held on 18 June 2013, DFMC of KwTDC agreed that Kwai Chung Park was a site suitable for development of a golf driving range, and that the impact of the proposed facility on nearby residents would be lesser than that of Wo Yi Hop Road Golf Driving Range.
- Upon commissioning of the new golf driving range, consideration might be given to reducing the timeslots for operating as a golf driving range in Wo Yi Hop Road Sports Ground so as to increasing the timeslots for football activities to cater for the high demand.

LCSD had consulted EPD before submitting the proposal. For details, please refer to EPD's replies.

- (iii) given that site constraints were already made known to LCSD when exploring the development of football training centre in 2001 (item 10 in Appendix G), whether reference had been made to previous proposal(s), including but not limited to the football training centre proposal in LCSD's consideration of a golf driving range. If yes, details of the reference made and if no, reasons why not;

In considering the facilities to be proposed, LCSD had made reference to the past Kwai Chung Park development options and comments of EPD (See **Annex 3**).

- (l) with reference to paragraph 3.8, LCSD informed HAB in January 2015 that it was unable to arrange funding (\$0.6 million according to information provided by ArchSD) for the landfill gas hazard assessment. The funding request was declined by HAB. Subsequently in March 2018, LCSD informed Audit that cost for technical assessment was normally not required to be borne by LCSD (Note 44 refers). Please explain:

- (i) the above discrepancy in statements made by LCSD on funding for technical assessment;
- (ii) whether it was the responsibility of HAB or LCSD to provide the required funding for the assessment;
- (iii) reasons for not conducting the assessment even though EPD's landfill gas hazard assessment (LGHA) guidance required that the project proponent should conduct such assessment to assess potential landfill gas hazards and recommend appropriate mitigation measures during the design, construction and operation stages for any development located within 250 metres around a landfill site (Note 43 refers);

In general, when taking forward recreational and sports projects, LCSD, upon confirmation of the proposed project scope, will prepare a PDS for HAB's consideration and issuance to ArchSD, so as to facilitate ArchSD to commence technical feasibility study and complete the Technical Feasibility Statement. The cost for technical assessment is normally not required to be borne by LCSD. Nevertheless, under special circumstances and subject to availability of resources, HAB or LCSD may allocate funding to ArchSD to carry out the study and assessment as needed.

In July 2014, ArchSD advised HAB that as the Kwai Chung Park could not accommodate the golf driving range with 30 golf driving bays as proposed in the PDS, HAB should revise the PDS for the Kwai Chung Park project. HAB should also arrange funding for carrying out the LGHA to facilitate ArchSD to finalise the TFS. In light of ArchSD's advice, HAB requested LCSD to explore revising the PDS and consider providing funding for the LGHA. In view that the proposed project scope and the PDS were required to be revised and LCSD was unable to arrange the funding required, LCSD thus sought assistance from HAB.

**(m) ArchSD informed HAB/LCSD in May 2014 and May 2017 that a landfill gas hazard assessment should be conducted before proceeding with the Technical Feasibility Statement to confirm the technical feasibility of the proposed project (paragraphs 3.7 and 3.10 refer), and expressed concern in May 2017 on whether the project could be launched before 2022. Please provide the following information:**

**(i) reasons for HAB/LCSD to seek clarification from EPD and ArchSD in June 2017 on the "order of precedence" of the landfill gas hazard assessment and justifications for conducting such assessment at detailed planning stage given ArchSD's advice on the possible adverse implications on time and cost if the significant changes were necessary due to the findings and mitigation measures to be proposed by the landfill gas hazard assessment (paragraph 3.11(b) refers);**

In response to a meeting between LegCo members and KwTDC members scheduled for 23 June 2017, LCSD prepared a draft reply for HAB in mid-May 2017. Since the draft reply had quoted the views of ArchSD and EPD on LGHA and technical feasibility study, HAB requested LCSD to confirm with both departments the accuracy of the information in early June 2017. Subsequently, ArchSD and EPD clarified that LGHA could be conducted in two stages. The preliminary LGHA should normally be carried out after confirmation of the proposed project scope or issuance of PDS and during the stage of technical feasibility study for completion of the TFS, and the detailed LGHA could be carried out at the detailed design stage.

**(ii) the Administration's priority in developing the Park as announced in 2017 Policy Address and a development timeline for individual procedure;**

Kwai Chung Park project was included in the Policy Address of

January 2017 as one of the 26 projects under the Five-Year Plan for Sports and Recreation Facilities and resources have been reserved. On 18 May 2018, HAB issued the PDS to ArchSD and also reserved the funding for ArchSD to carry out LGHA during the stage of technical feasibility study. Taking into account the various preparatory work and procedures, e.g. detailed design, consultation with DC on design, etc, we target to seek funding approval from the Finance Committee of LegCo in legislative year 2020-2021 for commencement of works by end-2021.

**(n) according to paragraph 3.14(c), LCSD informed Audit that it had all along relied on the professional and technical advice from relevant works department (e.g. ArchSD). Please provide the following information:**

**(i) reasons for LCSD not taking on board advice giving by ArchSD on the timing of the conduct of the assessment as mentioned in (m) above;**

Please refer to reply to items (l) and (m)(i) above.

**(ii) whether there is an established mechanism for LCSD to seek technical advice from ArchSD, such as periodic meetings or communications between the two departments, or LCSD would seek advice from ArchSD as and when technical issues arise;**

LCSD seeks professional and technical advice from ArchSD whenever necessary in various planning stages of works projects. Apart from written correspondence, departments concerned may hold meetings and conduct site visits to discuss issues arising from the implementation of the projects. In general, when a works project reaches the design stage, LCSD will have more regular meetings with ArchSD and its consultant.

**(o) according to paragraph 3.14(a), LCSD consulted KwTDC's working group throughout the process in putting forward the project. Please provide the following information:**

**(i) suggestions from KwTDC on the development of Kwai Chung Park and whether a golf driving range with 30 golf driving bays was a priority among the suggestions;**

In the meeting held on 26 February 2013, DFMC of KwTDC proposed the development of a golf driving range on the Kwai Chung Park site. Subsequently, in the meeting on 18 June 2013, DFMC agreed that Kwai Chung Park was a site suitable for development of a golf driving range and that the impact of the proposed facility on nearby residents would be lesser than that of the golf driving range of Wo Yi Hop Road Sports Ground. In the meeting held on 17 December 2013, DFMC gave consent to the development of a natural turf cricket cum football pitch, a golf driving range, a landscaped garden, a jogging trail, a fitness corner, a children's playground, a community garden and a pet garden on the site.

- (ii) **a chronology of actions taken by LCSD between July 2014 and November 2016 in putting forward development of the Park with KwTDC when the golf driving range proposal was considered not feasible by ArchSD (paragraph 3.9 refers);**

As mentioned in the reply to item (f) above, subsequent to the golf driving range proposal being considered not feasible by ArchSD, given the proposed facility would take up a vast area, LCSD had to revise the proposed facilities. In order to put the Park into gainful use as early as practicable, apart from following up the arrangements on the funding required for the LGHA, LCSD had also been working with HAB to focus on the application for short term use of the site for temporary cricket grounds since early 2015. A chronology of major milestones is as follows:

<b>Date/Year</b>	<b>Item</b>
7.8.2015	<ul style="list-style-type: none"> <li>LCSD consulted DFMC on the proposed granting of a Government Land Licence to Licensee A for development of temporary cricket grounds.</li> </ul>
23.9.2015	<ul style="list-style-type: none"> <li>LCSD and Licensee A gave a detailed briefing on the proposal of developing temporary cricket grounds to DFMC and secured acceptance of the proposal from DFMC.</li> </ul>



<b>Date/Year</b>	<b>Item</b>
23.3.2016	<ul style="list-style-type: none"> <li>• EPD granted a three-year Government Land Licence to Licensee A for the use of about 4.5 hectare of land area on the landfill with effect from 23 March 2016.</li> </ul>
10.11.2016	<ul style="list-style-type: none"> <li>• LCSD reported the progress of the “Kwai Chung Park” project to KwTDC and explained the technical limitations in details to the members. After realising that the site could not accommodate all the proposed facilities due to various technical difficulties, the DC agreed that it was necessary to take out some facilities and that the “Working Group on Development of Kwai Tsing Park” (the working group) should be formed to follow up the revision of proposed facilities.</li> </ul>

**(iii) the number of consultations or meetings with KwTDC's working group conducted since November 2016 and relevant extract of records/minutes of such discussions;**

Since November 2016, LCSD had consulted the Working Group on Development of Kwai Chung Park under KwTDC on four occasions. The details were listed as follows:

At the first meeting of the working group on 22 December 2016, members exchanged views on the proposed facilities of the Kwai Chung Park project and suggested arranging a site visit first to figure out the specific difficulties in the development. A joint site visit was conducted by LCSD together with Kwai Tsing District Office, EPD, ArchSD, Licensee A and KwTDC members to Kwai Chung Park on 18 January 2017 to consult members on the scope of development.

At the second meeting of the working group on 9 February 2017, LCSD responded to the recommendations put forward by the working group during the site visit. LCSD also put forth some preliminary ideas on the proposed facilities under the Kwai Chung Park project and consulted the members.

At the third meeting of the working group on 7 April 2017, LCSD further consulted members on the proposed facilities of the Kwai

Chung Park project. Members discussed the proposed facilities and estimated programme of Kwai Chung Park in further details.

At the fourth meeting of the working group on 4 September 2017, KwTDC's support for the proposed revised scope of project was obtained, and it was agreed that the Kwai Chung Park would be implemented in phases.

**(iv) latest development progress and action plan with timeline for Stage I and II development of the Park (paragraph 3.12 refers);**

At the KwTDC meeting held on 14 September 2017, its members endorsed the scope of development and proposed facilities as consented by the Working Group on Development of Kwai Chung Park on 4 September 2017. Stage I development will cover areas not occupied by the temporary cricket grounds and the BMX park so as to open the Park for public use as early as possible. After the commencement of the related works, LCSD will proceed with the preparation work for the development of the areas occupied by the temporary cricket grounds and the BMX park in Stage II.

On 15 September 2017, LCSD immediately submitted the draft revised PDS to ArchSD and EPD for comments. ArchSD and EPD gave their preliminary views in February and March 2018. The revised PDS was submitted to HAB on 11 May 2018 for consideration after rounds of discussions and site visits with departments concerned. Subsequently, HAB issued the revised PDS on 18 May 2018 requiring ArchSD to conduct a technical feasibility study.

LCSD has embarked on further preparatory work, including facilitating ArchSD in the technical feasibility study and related technical assessments when necessary. Upon approval of the Technical Feasibility Statement by Development Bureau, LCSD will request ArchSD to proceed with the design work and consult the DC on the conceptual design pursuant to the established procedures for capital works projects.

The Kwai Chung Park project was included in the Five-Year Plan for Sports and Recreation Facilities in 2017 Policy Address and resources were reserved for the project. Taking into account the various preparatory work and procedures including detailed design, etc., we target to seek funding approval from FC of LegCo in legislative year 2020-2021 for commencement of works by end-2021.

- (p) **target commission date of the temporary cricket grounds; whether the facilities were proposed for temporary usage as the expiry of the relevant licence would be in March 2019 and the usage rate of public cricket grounds in the last three years;**

The site of the cricket grounds at Gin Drinkers Bay Landfill was granted to Licensee A by EPD in March 2016 under a three-year land licence. Construction for the cricket grounds has entered its final stage. According to Licensee A, the grounds may commence operation in the second half of 2018. As it is the first time that cricket grounds are constructed on a landfill, the Government shall be prudent to observe their operation on a temporary basis before a decision on the term of renewal is made. The current land licence will expire in March 2019 and Licensee A has already applied for its renewal for three years. The application is now being processed by government departments concerned.

Currently, four artificial turf pitches and two natural turf pitches managed by LCSD could be used for playing cricket including competitions and training activities. The usage rate of turf pitches in the past three years is as follows:

Facility	District	Venue	Usage Rate		
			2015	2016	2017
Artificial turf pitch	Central & Western District	1. Sun Yat Sen Memorial Park	79%	77%	74%
	Wong Tai Sin	2. Po Kong Village Road Park			
		a) grass pitch	72%	74%	73%
		b) cricket practice net	18%	24%	26%
	Islands	3. Man Tung Road Park	80%	76%	71%
	Tai Po	4. Kwong Fuk Football Ground	61%	66%	70%
Natural turf pitch	Kowloon City	5. Tin Kwong Road Recreation Ground			
		a) grass pitch	94%	98%	100%
		b) cricket practice net	18%	33%	39%
	Kwai Tsing	6. Wo Yi Hop Road Sports Ground	83%	96%	95%

## Wan Po Road Pet Garden

(q) according to paragraphs 3.33(b) and 3.35, \$3.2 million were related to additional works items requested from Sai Kung DC ("SKDC") and in July 2008, the Development Bureau informed FC of the Administration's objective to contain the need for changes to user requirements to those that were absolutely essential and necessary to prevent cost overrun. Please provide the following information:

(i) measures taken by HAD/LCSD to minimize the need for changes in users requirements for budgetary control and steps taken by HAD/LCSD to communicate with SKDC of the Administration's intent above;

LCSD normally conveys all the works requirements to the works agent (i.e. HAD's Works Section) before the tendering exercise for inclusion in the tender document so as to avoid changes of works requirements after the award of contract. Should any works modifications arise from the actual site conditions and/or unforeseeable circumstances after the estimated expenditure of the project has been approved, LCSD will first review the project scope with the works agent to contain the expenditure as far as possible. Where there is no other alternative, LCSD will report the details to the DC and seek its consent for additional funding. Approval will then be sought from an officer with delegated authority in accordance with the applicable authorised expenditure limit.

(ii) reasons for the additional works requests from SKDC during construction stage and justifications to demonstrate that they were absolutely essential and necessary;

In a site inspection conducted in 2008 for the planning of the project, while the Incorporated Owners of Oscar By The Sea indicated that it had no objection to the construction of a pet garden in the vicinity of the housing estate in principle, it stressed that the pet garden must not be opened at night to avoid disturbances to the residents. At the meeting of the District Works Working Group (DWWG) of the District Facilities Management Committee (DFMC) of SKDC on 15 May 2008, it was resolved after discussion that certain proposed facilities should be removed and lighting in the pet garden be cancelled. It was agreed that the pet garden be opened only during daytime and the LCSD's funding application was supported by Members.

At the meeting of DFMC of SKDC on 17 April 2012, Members indicated that many park users would visit pet garden with their pets at night and insufficient lighting would easily lead to accidents. Lastly, DFMC urged LCSD to follow up on the provision of lighting and conduct a timely review of the opening hours of the pet garden in the light of the utilisation after its commissioning.

In response to Members' requests, at the meeting of DWWG of DFMC of SKDC on 16 October 2012, the architectural consultant briefed Members on the works progress and proposed new items, including reserving underground wiring facilities to facilitate a more effective and expeditious enhancement of the lighting when it was necessary to open the pet garden at night in future.

**(iii) discussion details, including dates of meetings and discussion summary, between LCSD/HAD and SKDC on providing lighting at the Pet Garden;**

The relevant details are as follows:

Date	Item
2008.5.15	<ul style="list-style-type: none"> <li>At the meeting of DWWG of DFMC of SKDC held on 15 May 2008, Members noted the views of the nearby residents and agreed that the pet garden would be opened only during daytime. The funding application from LCSD was supported by Members.</li> </ul>
2012.4.17	<ul style="list-style-type: none"> <li>At the meeting of DFMC of SKDC held on 17 April 2012, Members indicated that many park users would visit pet garden with their pets at night and insufficient lighting would easily lead to accidents. Lastly, Members urged LCSD to follow up on the provision of lighting and conduct a review three months after the commissioning of the pet garden.</li> </ul>
2012.10.16	<ul style="list-style-type: none"> <li>At the meeting of DWWG of DFMC of SKDC held on 16 October 2012, the architectural consultant briefed Members on the works progress and indicated that the construction cost of the project had increased to \$21 million, including that required for making provision for installation of underground wiring facilities to facilitate a more efficient and expeditious enhancement of the lighting when it was necessary to open the pet garden at night in future.</li> </ul>

- (r) **according to paragraph 3.36, LCSD identified the technical difficulties in handling the project and that HAD's Works Section was unable to provide expert advice and timely assistance due to limited resources; reasons for LCSD's conclusion that "limited resources had hindered it[HAD's Work Section] from providing timely assistance and proper technical advice to both Consultant A and Contractor C";**

As understood by LCSD at that time, given the limited resources available to HAD's Works Section and the large number of District Minor Works projects which had to be handled, HAD's Works Section might not be able to provide timely and proper technical advice to Consultant A and Contractor C.

- (s) **referring to paragraph 3.37, lessons learnt and remedy to be taken to address the ground settlement problem in the development of restored landfills in future.**

LCSD is a lead department without its own professional works staff to implement capital works projects or District Minor Works projects. Thus, LCSD heavily relies on its works agent and departments concerned for the provision of professional and technical advice in the implementation of works projects. Learnt from its experience with the Wan Po Road Pet Garden project, LCSD will specifically remind works agents, project consultants and contractors to pay particular attention to the possible ground settlement problem and the need to comply with the relevant guidelines of EPD in the development of other projects on restored landfills in the future.

「葵涌公園」工程計劃的擬建設施

目的

本文件旨在向委員匯報於「葵涌公園」用地發展康樂設施的工程計劃的最新進展，並就工程計劃的擬建設施，諮詢委員會的意見。

背景

2. 前「葵涌公園」用地佔地共有約 27 公頃，有關的位置圖載於附件。

3. 前「葵涌公園」於 1992 年因潛在堆填區沼氣問題而關閉。環境保護署在 1999 年 3 月接手管理公園的用地，以便進行堆填區復修工程，相關工程於 2000 年 9 月完成。在工程完成後，康樂及文化事務署（康文署）曾研究透過不同途徑，包括以地區小型工程計劃及透過體育總會發展公園的用地。除了於 2009 年 10 月由香港單車聯會，在公園較低的部份平台(約 4 公頃)，發展香港賽馬會國際小輪車場，其他相關發展建議都因財政考慮未能落實。

4. 前「葵涌公園」用地目前尚餘下可供發展的面積約為 23 公頃，但由於涉及需特別處理的技術問題，例如堆填區覆蓋層不可承受過重負荷，故不能興建大型建築物，以免影響堆填區的修復設施，而康體設施亦不能妨礙承辦商進行日常修護工作，康文署亦須採納一些防護堆填氣體風險的措施。另外，在已修復的堆填區上是禁止生火和燃點蠟燭，故須禁止市民在該用地上進行涉及生火或燃點蠟燭的活動，例如在中秋節時市民不可攜帶燃點的蠟燭及燈籠到公園。

5. 就該用地的未來發展路向，康文署於 2013 年 2 月 26 日諮詢葵青區議會轄下地區設施管理委員會(地委會)的意見。委員建議署方除了考慮發展大型公園外，亦可研究其他方案的可行性，包括發展單車公園、板球場、舞龍及舞獅場地、寵物公園、環保教育中心及青年旅舍等。康文署亦曾就該用地未來發展路向，諮詢相關政府部門及政策局的意見，但並未收到任何發展建議。

6. 康文署其後於 2013 年 6 月 6 日的葵青區議會轄下康樂及文化委員會和 6 月 18 日的地委會會議上，再次諮詢委員的意見。委員初步同意在該用地上發展板球、足球及高爾夫球練習場等體育設施。

#### 擬建設施

7. 經初步研究後，康文署建議工程計劃的擬建設施如下：

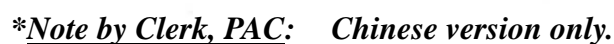
- (i) 1 個天然草地板球場，內設練習場；
- (ii) 在天然草地板球場上附加 1 個足球場；
- (iii) 1 個設有 30 條高爾夫球發球道的高爾夫球練習場，內設懸垂安全網和圍欄安全網；
- (iv) 1 個遍植花木的園景花園，內設太極場地、休憩設施、避雨亭／涼亭；
- (v) 1 條設有健身站的緩跑徑；
- (vi) 1 個健體園地，供長者、成人和輪椅使用者使用；
- (vii) 1 個兒童遊樂場，供不同年齡組別兒童使用，並提供多元化共融遊樂設施，讓傷健同享；
- (viii) 1 個設有 150 幅小園圃的社區園圃，可供舉辦社區園圃種植研植班；
- (ix) 1 個寵物公園；
- (x) 1 座服務大樓，內設管理處、更衣室、洗手間、以及相關設施；
- (xi) 1 個停車場；以及
- (xii) 其他需要的輔助設施。

#### 徵詢意見

8. 請委員就上文第 7 段的擬建設施表達意見。在技術和財政預算許可的情況下，我們會盡可能採納委員的意見，並展開進一步的策劃工作，包括草擬有關的工程界定書予民政事務局審批，以及請建築署進行工程技術可行性研究，以便評估該用地是否適合發展上述設施。

康樂及文化事務署  
2013 年 11 月







# ARCHITECTURAL SERVICES DEPARTMENT 建築署

QUEENSWAY GOVERNMENT OFFICES, 66 QUEENSWAY, HONG KONG. 香港金鐘道六十六號金鐘道政府合署

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By fax 2543 9197 and e-mail  
 (ahychu@legco.gov.hk, kmho@legco.gov.hk & pkwlai@legco.gov.hk)

11 June 2018

Mr Anthony CHU  
 Clerk to the Public Accounts Committee  
 Legislative Council  
 Legislative Council Complex  
 1 Legislative Council Road  
 Central, Hong Kong

Dear Mr CHU,

**Public Accounts Committee**  
**Consideration of Chapter 1 of the Director of Audit's Report No. 70**  
**Management of restored landfills**

Thank you for your letter dated 30 May 2018 requesting response / information to facilitate the Public Accounts Committee's consideration of the above Chapter. Please find our reply below:

- (a) with reference to Table 4 of paragraph 3.2, please explain and provide Information on:
- (i) differences in role, division of work and responsibilities between EPD, LCSD and other departments which acted as the works agents in developing the seven recreational projects;

For the Jordan Valley Park project (item 3) and Ngau Chi Wan Park project (item 7) in Table 4, the role of ArchSD was the works agent and the work involved :

- assisting user departments in developing their requirements;
- appointing consultants to carry out design and construction supervision for the facilities to meet users' requirements and Government's needs;

- appointing contractors to carry out construction of the facilities; and
- inspecting works to ensure the facilities are developed up to standard.

For the Kwai Chung Park project (item 1) in Table 4, ArchSD had provided advisory services to LCSD before confirmation of the role of works agent.

- (ii) factors and criteria when assigning which department as works agents for individual projects;

Depending on the works nature, ArchSD would usually be the works agent for LCSD's capital works projects under Head 703.

For District Minor Works (DMW) projects, please refer to HAD's response.

- (iii) relevant works agent for items 3, 4 and 7 sought funding approval from FC of LegCo after detailed design stage, which was different from projects under District Minor Works Programme (i.e. items 2, 5 and 6) in which funding was sought after feasibility study stage (Note 1 to the Table refers); the procedure and approval required for the change/increase in the project cost;

For the capital works projects for which ArchSD was works agent (items 3 and 7), the procedures and approvals required for change/increase in the project costs would follow the previous Financial Circular No. 11/2004, i.e. SFST may approve, under delegated authority from FC of LegCo, minor changes to project scope or increase in Approved Project Estimate (APE) which does not exceed \$15 million. Any increase in APE exceeding \$15 million must be submitted to FC of LegCo for approval.

- (b) is there a standing mechanism for LCSD, HAD and ArchSD to inform EPD of the progress of the development of recreational projects at restored landfills and findings of the studies and surveys conducted on the landfills by the consultants/contractors commissioned by these departments. If yes, details, including when and what information has been conveyed of EPD;

There is no standing mechanism for ArchSD to inform EPD but during implementation of projects at restored landfills, ArchSD with its consultant would closely liaise with EPD and its contractor regarding progress, design and construction issues that would affect the aftercare facilities as appropriate. ArchSD would submit those studies and surveys that are related to landfill aftercare facilities to EPD for comments.

For the Jordan Valley Park project, ArchSD had closely liaised with EPD and its contractor through letters, memoranda, e-mails, meetings and joint site visits for resolving design issues and had informed EPD about the findings/studies related

to the landfill aftercare facilities during the whole process of design development. For the Jordan Valley Park project, the Landfill Gas Hazard Assessment (LGHA) and the design details of the proposed afteruse facilities had been submitted to EPD for comments. For the Kwai Chung Park project, the preliminary LGHA would be conducted in the feasibility study stage for submission to EPD and the detailed LGHA would be completed before finalisation of detailed design.

### Kwai Chung Park

- (c) according to Note 2 to Table 4, details on the technical advice given by ArchSD to LCSD on the Kwai Chung Park project, such as when the advice was given and a brief description of the advice;

ArchSD provided advice to LCSD on the technical aspects in Dec 2017 and Feb 2018, major items as follows:-

- a. Landfill Gas Hazard Assessment (LGHA) will be required to be submitted to the Environmental Protection Department (EPD) for endorsement.
  - b. In view of the site constraints, functional areas and spaces would be fragmented, and induce security and management problem in this regard.
  - c. Large areas of slopes would limit development area and increase maintenance cost.
  - d. Widespread gas monitoring wells in the site will restrict the proposed project development
  - e. LCSD to reconsider incorporating the other flatland into the site e.g. HKJC International BMX Park and Temporary Cricket Ground for better planning of use or to review the site area by confining to the flatland / gentle slope areas.
- (d) ArchSD informed HAB/LCSD in May 2014 and May 2017 that a landfill gas hazard assessment should be conducted before proceeding with the Technical Feasibility Statement to confirm the technical feasibility of the proposed project (paragraphs 3.7 and 3.10 refer), and expressed concern in May 2017 on whether the project could be launched before 2022. Please provide the following information:
- (i) reasons for ArchSD to state that HAB should arrange funding for carrying out the landfill gas hazard assessment in July 2014 when it advised that the site was not suitable for the proposed golf driving range but no proposed new use was stated in HAB's Project Definition Statement (paragraphs 3.7 refers). Is ArchSD of the view that the landfill gas hazard assessment should be conducted irrespective of whether a specific use being identified;

ArchSD considered that the Landfill Gas Hazard Assessment (LGHA) should be conducted after the proposed project scope has been determined as the assessment should take into account the specific use in the site. ArchSD advised HAB on 10 July 2014 to review the project scope by removing the golf driving range, and so, in order to ascertain the feasibility of the revised scope of work, it was necessary to conduct a LGHA. ArchSD advised HAB/LCSD to source necessary funding such that the LGHA could be carried out in good time once the project scope was confirmed.

- (ii) reasons for EPD/ ArchSD to have “no objection” for HAB/LCSD to carry out the landfill gas hazard assessment at detailed planning stage despite that the findings of the assessment might affect the completion time and cost of the project.

Landfill Gas Hazard Assessment often comprises two stages.

The first stage, or 'Preliminary Qualitative Assessment' , is carried out at the early planning stage of a development project and its scope is necessarily limited by the level of available detail about the proposed development. The aim is to determine the acceptability in principle of a proposed development and to identify the scope of any further investigations which may be required to complete the assessment.

The second stage, or 'Detailed Qualitative Risk Assessment', is undertaken at the stage when the project is definitely proceeding and when all the relevant details of its design and results of any site investigations are known. The detailed assessment will review and, where necessary, revise the findings of the initial assessment.

ArchSD had indicated to LCSD that there was no strong view on conducting LGHA at a more detailed planning stage but also advised LCSD that in case of significant changes to the scope, design and construction of the project are necessary at a more detailed design stage due to the finding of the LGHA, there would be time and cost implications which could have been dealt with or mitigated earlier with a 'Preliminary Qualitative Assessment' carried out.

Yours sincerely,



( Edward TSE )

for Director of Architectural Services

c.c. Secretary for Environment (fax no. 2537 7278)  
Secretary for Home Affairs (fax no. 2591 5536)  
Director of Environment Protection (fax no. 2891 2512)  
Director of Leisure and Cultural Services (fax no. 2691 4661)  
Director of Home Affairs (fax no. 2574 8638)  
Secretary for Financial Services and the Treasury (fax no. 2147 5239)  
Director of Audit (fax no. 2583 9063)

政府總部  
民政事務局

香港添馬添美道二號  
政府總部西翼十二樓



**GOVERNMENT SECRETARIAT  
HOME AFFAIRS BUREAU**

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CENTRAL GOVERNMENT OFFICES,  
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TAMAR,  
HONG KONG.

**Translation**

本函檔號 Our Ref: HAB/CR/1-160/7/25C Pt. 1  
來函檔號 Your Ref : CB4/PAC/R70

電話號碼 Tel. No.: 3509 8127  
傳真號碼 Fax No.: 2519 7404

(Fax no.: 2543 9197)

13 June 2018

Mr Anthony Chu  
Clerk to Public Accounts Committee  
Legislative Council Secretariat  
Legislative Council Complex  
1 Legislative Council Road  
Central, Hong Kong

Dear Mr Chu,

**Public Accounts Committee  
Consideration of Chapter 1 of the Director of Audit's Report No. 70  
Management of restored landfills**

As requested in your letter dated 30 May 2018, our response is set out in the Annex for reference.

Yours sincerely,

(Original signed)

( Ms Linda LAW )  
for Secretary for Home Affairs

c.c. Secretary for Environment (fax no. 2537 7278)  
Director of Environment Protection (fax no. 2891 2512)  
Director of Leisure and Cultural Services (fax no. 2691 4661)  
Director of Architectural Services (fax no. 2810 7341)  
Director of Home Affairs (fax no. 2574 8638)  
Secretary for Financial Services and the Treasury (fax no. 2147 5239)  
Director of Audit (fax no. 2583 9063)



**Public Accounts Committee**  
**Consideration of Chapter 1 of the Director of Audit's Report No. 70**  
**Management of restored landfills**

**Response of Home Affairs Bureau in respect of Kwai Chung Park**

**Question V(a): with reference to paragraph 3.8, LCSD informed HAB in January 2015 that it was unable to arrange funding (\$0.6 million according to information provided by ArchSD) for the landfill gas hazard assessment. The funding request was declined by HAB. Subsequently in March 2018, LCSD informed Audit that cost for technical assessment was normally not required to be borne by LCSD (Note 44 refers). Please explain:**

- (i) the above discrepancy in statements made by LCSD on funding for technical assessment;**
- (ii) whether it was the responsibility of HAB or LCSD to provide the required funding for the assessment;**
- (iii) reasons for declining the funding request by HAB;**

In general, when taking forward recreation and sports projects, the Leisure and Cultural Services Department (LCSD), upon confirmation of the proposed project scope, will prepare a Project Definition Statement (PDS) for the Home Affairs Bureau (HAB)'s consideration and issuance to the Architectural Services Department (ArchSD), so as to facilitate ArchSD to commence technical feasibility study and complete the Technical Feasibility Statement (TFS). HAB or LCSD may allocate funding to ArchSD to carry out the study and assessment as needed.

2. In July 2014, ArchSD advised this Bureau that as the Kwai Chung Park could not accommodate the golf driving range with 30 golf driving bays as proposed in the PDS, we should revise the PDS for the Kwai Chung Park project. We should also arrange funding for carrying out the Landfill Gas Hazard Assessment (LGHA) to facilitate ArchSD to finalise the TFS. In light of ArchSD's advice, HAB requested LCSD to explore revising the project scope and

consider providing funding for the LGHA. LCSD subsequently advised that it was unable to arrange the funding required immediately and sought assistance from HAB. In view that the proposed project scope was required to be revised and we considered the LGHA concerned formed part of the technical feasibility study which should be carried out after confirmation of the project scope, we did not arrange the funding at that time.

- (iv) reasons for not conducting the assessment even though EPD's landfill gas hazard assessment guidance required that the project proponent should conduct such assessment to assess potential landfill gas hazards and recommend appropriate mitigation measures during the design, construction and operation stage for any development located within 250 metres around a landfill site (Note 43 refers);**

3. We considered that one of the crucial factors for taking forward the Kwai Chung Park project was to confirm the proposed project scope so as to facilitate ArchSD to commence technical feasibility study, including the carrying out of LGHA, according to the proposed project scope.

4. As mentioned above, as ArchSD stated in July 2014 that the site could not accommodate the proposed golf driving range with 30 golf driving bays, we considered it necessary to follow up on the proposed project scope first and revise the PDS and thus did not provide funding for the LGHA at that time.

**Question V(b) : ArchSD informed HAB/LCSD in May 2014 and May 2017 that a landfill gas hazard assessment should be conducted before proceeding with the Technical Feasibility Statement to confirm the technical feasibility of the proposed project (paragraphs 3.7 and 3.10 refer), and expressed concern in May 2017 on whether the project could be launched before 2022. Please provide the following information:**

- (i) reasons for HAB/LCSD to seek clarification from EPD and ArchSD in June 2017 on the “order of precedence” of the landfill gas hazard assessment and justifications for conducting such assessment at detailed planning stage given ArchSD's advice on the possible adverse implications on time and cost if the significant changes were necessary due to the findings and mitigation measures to be proposed by the landfill gas hazard assessment (paragraph 3.11(b) refers);**

5. In response to a meeting between Legislative Council (LegCo) members and Kwai Tsing District Council members scheduled for 23 June 2017, the LCSD prepared a draft reply for this Bureau in mid-May 2017. Since the draft reply had quoted the views of ArchSD and Environmental Protection Department (EPD) on LGHA and technical feasibility study, we requested LCSD to confirm with both departments the accuracy of the information in early June 2017. Subsequently, ArchSD and EPD clarified that LGHA could be divided into two stages. The preliminary LGHA should normally be carried out after confirmation of the proposed project scope or issuance of PDS and during the stage of technical feasibility study for completion of the TFS, and the detailed LGHA could be carried out at the detailed design stage.

**(ii) the Administration's priority in developing the Park as announced in 2017 Policy Address and a development timeline for individual procedure.**

6. Kwai Chung Park project was included in the Policy Address of January 2017 as one of the 26 projects under the Five-Year Plan for Sports and Recreation Facilities and resources have been reserved. On 18 May 2018, we issued the PDS to ArchSD and also reserved the funding for ArchSD to carry out LGHA during the stage of technical feasibility study. Taking into account the various preparatory work and procedures, e.g. detailed design, District Council consultation of design etc, we target to seek funding approval from the Finance Committee of LegCo in legislative year 2020-2021 for commencement of works by end-2021.

本署檔案  
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來函檔案  
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**Environmental Protection Department  
Environmental Infrastructure Division**

Special Waste and Landfill Restoration Group

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環境保護署  
環境基建科

特殊廢物及堆填區修復組

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4 October 2018

Clerk to Public Accounts Committee  
Legislative Council Secretariat  
Legislative Council Complex  
1 Legislative Council Road  
Central, Hong Kong  
(Attn: Mr. Anthony CHU)

Dear Sir,

**Public Accounts Committee (PAC)**  
**Chapter 1 of the Director of Audit's Report No.70**  
**Management of Restored Landfills**  
**Updated Information for Two Afteruse Projects at Restored Landfills**

I would like to update PAC with the latest development of the two afteruse projects as follows:

The Jockey Club Football Training Centre (JCFTC) at the Tseung Kwan O Stage I Landfill (TKOL-I) has commenced its operation on 3 August 2018, whilst the Temporary Cricket Grounds (TCG) at the Gin Drinkers Bay Landfill (GDBL) has commenced its operation on 1 September 2018.

If you need any further information, please contact the undersigned.

Yours faithfully,

(Keith YEUNG)  
for Director of Environmental Protection



康樂及文化事務署  
Leisure and Cultural Services Department

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圖文傳真 FAX NO: 2602 1480  
本署檔號 OUR REF: (60) in LCSD 18/HQ726/00(KT)X  
來函檔號 YOUR REF: CB4/PAC/R70

12 July 2018

Mr Anthony Chu  
Clerk to Public Accounts Committee  
Legislative Council Secretariat  
Legislative Council Complex  
1 Legislative Council Road  
Central, Hong Kong

Dear Mr Chu,

**Public Accounts Committee**  
**Consideration of Chapter 1 of the Director of Audit's Report No. 70**  
**Management of restored landfills**

As requested in your letter dated 28 June 2018, our bilingual response is enclosed for reference.

Yours sincerely,

(Ms Florence TSUI)  
for Director of Leisure and Cultural Services

### **(III) For the Leisure and Cultural Services Department**

**The Administration was requested to provide the following information:**

#### **Construction of Jordan Valley Park**

- (a) referring to paragraph 3.44, reasons for assigning the construction of Jordan Valley Park as one of the 25 projects for priority implementation and the Administration's timetable of implementing the Jordan Valley Park project as at end 2005;**

Having reviewed the ex-Municipal Council (ex-MC) projects and taking into account the distribution of leisure and cultural facilities, the needs of various districts due to increasing population, the views of the District Council, the keen demand for open space in the densely populated Kwun Tong District, the construction of Jordan Valley Park was identified as one of the 25 leisure and cultural services projects for priority implementation in the Policy Address of 2005. Based on the initial estimate as at end-2005, the Administration anticipated that the related works would commence in 2008 and complete in 2010.

- (b) Details with photos and diagrams for illustration regarding variation works of \$4.8 million requested by LCSD on the radio-controlled model car racing circuit and why was the variation considered necessary and reasons for not incorporating the works into tender documents;**

The variation works of \$4.8 million cover not only improving facilities for the radio-controlled car racing circuit, but also other improvement works. The works include:

- refined layout of the radio-controlled model car circuit by :
  - (i) adding high traction fine asphalt floor for radio-controlled model car circuit and adding compact flexible surfacing works including road hump and marking paint at indoor radio-controlled model car circuit covered pit area;
  - (ii) adding green noise barrier for the driver's stand;
  - (iii) adding Plexiglas wall at radio-controlled model car circuit;

- (iv) adding working benches and seats for covered pit area; and
- (v) some minor variation works for the radio-controlled model car circuit;
- replacing bollard lights by pole-mounted flood lights at lawn area;
- addition and refining details of signages to general park areas;
- improving layout for the park office and horticultural education centre by adding aluminum cladding to canopy; and
- other miscellaneous minor items.

The variation works were considered necessary on operational grounds after site visit during the construction stage.

Please refer to **Annex** for the layout plan showing the variation works.



ADDENDUM NO.1

LEGEND:-

- (W) WASTE RECEPTACLE
- (D) BARRIER-FREE OUTDOOR DRINKING FOUNTAIN (2 NOS.)
- (T) BARRIER-FREE OUTDOOR PUBLIC TELEPHONE
- NATURAL STONE PATH FOR MANHOLE MAINTENANCE
- BENCH W/ RAIN SHELTER

ArchSD Record No. A00369281 Proj. Comp. Date 03/2010

REV: 14/06/07 ADDENDUM NO.1

no.	date	description	initial
1		revision	

Lead Consultant: **andrew lee king fun & associates architects ltd.**  
18/F, Universal Trade Centre, 9 Ardour Road, C. Hong Kong, Tel: 2330 0000 and 2330 0001

Geotechnical & Structural Sub-consultant: **MEINHARDT (C&S) LTD.**

Building Services Sub-consultant: **PARSONS BRINCKERHOFF (ASIA) LTD.**

Environmental Sub-consultant: **CH2M HILL HONG KONG LIMITED**

Landscape Architectural Sub-consultant: **URBIS LIMITED**

Job no: **A-0613**

designed	name	signed	date
drawn	DENNIS YEUNG		
checked	T. LEUNG		
approved	ANDY CHU		
	P.M. TANG		

consultancy agreement no: 9AQ004

project title: **RECREATIONAL FACILITIES ON JORDAN VALLEY FORMER LANDFILL KWUN TONG**

drawing title: **OVERALL SITE PLAN**

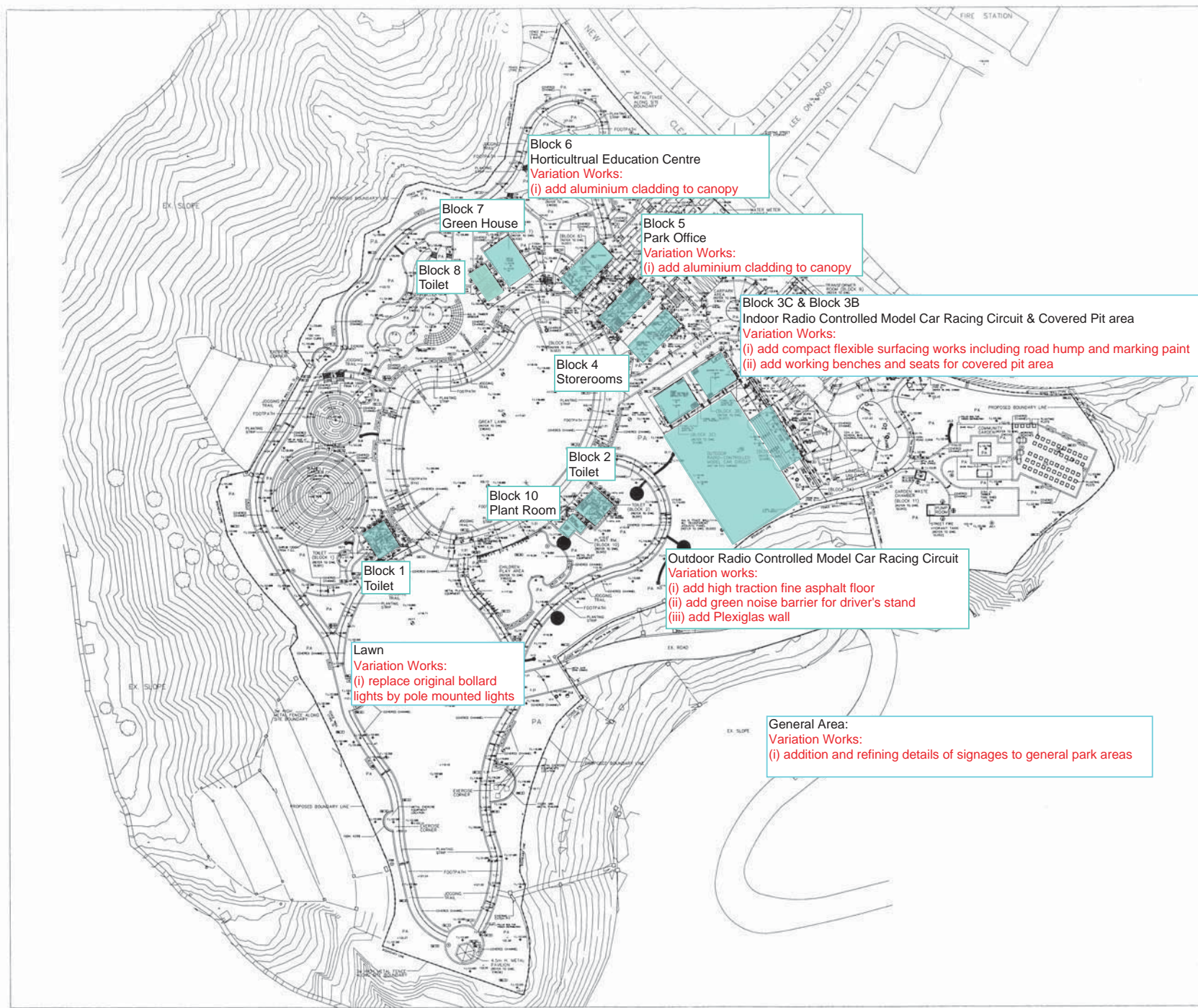
drawing no.	scale	rev.
AB/6004/GP004	1 : 750	1

approved

signature

date: 27 JULY 2007

 **ARCHITECTURAL SERVICES DEPARTMENT**







# ARCHITECTURAL SERVICES DEPARTMENT 建築署

QUEENSWAY GOVERNMENT OFFICES, 66 QUEENSWAY, HONG KONG. 香港金鐘道六十六號金鐘道政府合署

來函檔號 Your Ref. : CB4/PAC/R70  
 本函檔號 Our Ref. : 10/1-125/33  
 電話號碼 Tel. No. : 2867 3877  
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By fax 2543 9197 and e-mail  
 (ahychu@legco.gov.hk, kmho@legco.gov.hk & pkwlai@legco.gov.hk)

16 July 2018

Mr Anthony CHU  
 Clerk to the Public Accounts Committee  
 Legislative Council  
 Legislative Council Complex  
 1 Legislative Council Road  
 Central, Hong Kong

Dear Mr CHU,

**Public Accounts Committee**  
**Consideration of Chapter 1 of the Director of Audit's Report No. 70**  
**Management of restored landfills**

Thank you for your letter dated 28 June 2018 requesting response / information to facilitate the Public Accounts Committee's consideration of the above Chapter. Please find our reply below:

Construction of Jordan Valley Park

- (a) Referring to paragraph 3.46(a)(i),(ii) and (iv) which listed out the additional works after awarding construction contract, please provide reasons for not able to incorporate the works into the tender documents; the necessity for the variation works; whether, and, if so, which of the items would have been avoidable if adequate time and planning had been done before the award of original contract. Please provide photos or diagrams illustrating new design of buildings and fence wall footings locating above the capping layer, leachate system, landfill gas system and sub-soil drain system of the landfill;

In the 2005 Policy Address, the Chief Executive of the Hong Kong Special Administrative Region announced that the construction of the Jordan Valley Park (JVP) at Jordan Valley Landfill would be one of the 25 projects for priority

implementation. Due to tight project time frame, the project was implemented in a very tight and fast track programme to meet the need of the local community. The consultants had to carry out many design development/coordination activities and tender documentation in parallel. The consultant's design with Independent Checker (IC)'s checking was completed just before the issue of tender. We expected that EPD's comments, if any, would not be significant because the design had been checked by IC and, if indeed necessary, EPD's comments could be incorporated by variation orders under the contract in the usual way similar to other projects. To enable early completion of the project for public enjoyment, it was then decided to proceed with the tendering exercise before EPD provided their comments. As such, the additional work mentioned in paragraph 3.46(a)(i) had not been included in the tender document, yet at that time the project team believed that the additional works could be resolved after contract commencement. Please refer to paragraph (e)(i) below for more details.

For the additional works mentioned in paragraph 3.46(a)(ii) and (iv), they came up after the contract had commenced. The items 3.46(a)(ii) were required to suit latest requirements given by statutory bodies and utilities departments while items 3.46(a)(iv) were required to comply with EPD requirements given at construction stage. As a result, these additional works were incorporated into the contract by variation orders.

The variation works in paragraph 3.46(a)(i),(ii) & (iv) were considered necessary to: (i) resolve the building location issue (conflicts of the afteruse facilities with the aftercare facilities) (3.46(a)(i)); (ii) comply with the statutory requirements and requirements and comments on provision of utilities from other government departments (3.46(a)(ii)); and (iii) to comply with EPD requirements (3.46(a)(iv)).

If sufficient time was available for obtaining comments from EPD for incorporation into the tender before the issuance of the tender, most of the items under 3.46(a)(i) would likely be incorporated in the tender. To sum up our experience, if sufficient time had been allowed for completion of all the design development, IC checking and obtaining EPD's comments for incorporation into tender document before tender, the amount of the variation works might be reduced. However, it should be noted that for this project, the expenditure would have been incurred irrespective of whether the work was included in the tender or as a variation subsequent to award of contract. Please refer to paragraph (d) below for more details.

Please refer to Annex I for the diagrams illustrating new design of buildings and fence wall footings locating above the capping layer, leachate system, landfill gas system and sub-soil drain system of the landfill.

- (b) Details with photos or diagrams for illustration regarding variation works of \$4.8 million requested by LCSD on the radio-controlled model car racing circuit and why was the variation considered necessary and reasons for not incorporating the works into tender documents;

The variation works of \$4.8 million include :

- Revising the design of the radio-controlled model car circuit by :
  - (i) adding high traction fine asphalt floor for radio-controlled model car circuit and adding compact flexible surfacing works including road hump and marking paint at indoor radio-controlled model car circuit covered pit area;
  - (ii) adding noise barrier for the driver's stand;
  - (iii) adding Plexiglas wall at radio-controlled model car circuit;
  - (iv) adding working benches and seats for covered pit area; and
  - (v) some minor variation works for the radio-controlled model car circuit;
- Replacing original bollard lights by pole-mounted flood lights at lawn area;
- Revising details and addition of signages to general park areas;
- Adding aluminium cladding to canopy at the park office and horticultural education centre; and
- Other miscellaneous minor items

The variation works were considered necessary on operational ground after site visit during the construction stage.

Please refer to Annex II for the layout plan showing the variation works.

- (c) Although three consultants were appointed for the project, there were still project cost overrun and delay problems. Please advise reasons for that and the role of the respective three consultants;

The three consultants appointed by ArchSD for the project were responsible for different duties. Their roles were as follows :

- (i) A lead consultant for design and construction supervision;
- (ii) A quantity surveyor for preparation of tender documents and valuing the cost of works; and
- (iii) A specialist independent checker for reviewing the design and layout plans and, in view of the special nature of this project, checking compliance with the EPD's technical specification for carrying out works on restored landfills.

Due to tight project time frame, the project was implemented in a very tight and fast track programme to meet the need of the local community. The consultants had to carry out many design development/coordination activities and tender documentation in parallel. The project was very unique and was the first project constructed on a landfill site implemented by ArchSD. Optimal design solutions

to overcome the problems encountered were worked out through discussions among all parties concerned. The consultant's design with IC's checking was completed just before the issue of tender. During tender assessment stage, comments from EPD were received. Additional works mentioned in paragraph 3.46(a)(i) were found to be required to address EPD's comments. Besides, additional works mentioned in paragraph 3.46(a)(ii) were required for compliance with statutory requirements and requirements and comments on provision of utilities from other government departments. Additional works mentioned in paragraph 3.46(a)(iii) was required to incorporate LCSD requested improvement works for fine-tuning the facilities from operational point of view. Additional works mentioned in paragraph 3.46(a)(iv) was required to comply with EPD requirements given at construction stage. These additional works were incorporated into the contract by variation orders, and additional cost was involved. As mentioned under (a) above, if sufficient time had been allowed for obtaining comments from EPD for incorporation into the tender before the issuance of the tender, most of the items 3.46(a)(i) would likely be incorporated in the tender.

The Contract was originally scheduled for completion in September 2009. Extension of time (EOT) of 185 days were issued due to inclement weather and EOT of 2 days were issued due to truck drivers on strike which was an industrial action conducted by the Hong Kong Truck Drivers Association. Hence, the Contract was completed in March 2010, against the completion date of December 2009 stated in the PWSC paper.

- (d) Referring to paragraph 3.50, reasons for ArchSD to consult EPD on the tender documents only after issuing tender, which was contrary to the request of EPD to provide detailed design and layout plans for its comments when available. Please provide a chronology of communication between EPD and ArchSD in this regard;

Consultation with EPD had commenced since early stage of the project. During the feasibility study stage, ArchSD had prepared submissions to EPD and obtained respective requirements from EPD and incorporated into the Technical Feasibility Statement. During the design process, ArchSD and its consultant had closely liaised with EPD for the design, ground investigation, requirements of landfill gas hazard assessments, necessary modification works of the aftercare facilities etc, through letters, memorandums, e-mails, meetings, joint site visits and telephone discussions. After completion of the layout plans and detailed design and checked by Independent checker (IC), they were submitted to EPD. However, due to tight project time frame, submissions of the layout plans and detailed design to EPD could only take place after the issue of tender. Although EPD's comments could not be included in the tender document due to the tight programme, variation orders to address EPD's comments were issued timely with no abortive work incurred. The expenditure for work to address EPD's comments would have been incurred irrespective of whether the work was included in the tender or as a variation subsequent to the award of contract.

Please find a chronology of communication between EPD and ArchSD in Annex III.

- (e) Although building location issue was identified before the award of contract, ArchSD had not revised tender requirements but instead decided to resolve the issue at post-contract stage by variation orders (paragraph 3.48 refers). Please provide:

- (i) Justifications for the decision;

It was decided not to revise the tender requirements (hence the need to re-tender since the revisions were only known after tender return) and postpone the award of the contract after taking into account the following considerations:

- to avoid delaying the project programme;
- the Government would suffer a greater loss if the project were to be re-tendered in view of the rising trend of construction costs;
- in general for construction works contracts, it was expected and unavoidable to have certain site constraint matters resolved during construction and the costs absorbed by contingencies; and
- the anticipated variations would not be substantial.

- (ii) Reasons for not informing Central Tender Board of the change in design as set out in tender documents and whether there are guidelines on what changes/issues needed to report back to the Central Tender Board, and details of precedent cases; has ArchSD consulted FSTB or other departments before making the decision not to inform the Central Tender Board;

During that time, ArchSD considered that the conflicts of the afteruse facilities with the aftercare facilities could be resolved by design changes which would not be substantial and could be resolved by variation works at post contract stage. In fact, of such problem with the 4 building blocks and the model car circuit located above the landfill gas pipes and sub-soil drain system, 2 of the building blocks were overcome by minor re-positioning of the buildings. Hence, ArchSD did not inform CTB of the change in design and ArchSD had not consulted FSTB or other departments before making the decision.

There are no guidelines on what changes / issues needed to report back to the Central Tender Board. According to our record, there were no cases with ArchSD that changes/issues were reported back to the Central Tender Board in the past 10 years.

- (iii) Given the additional variation works of \$23.8 million (paragraph 3.46(a) refers), whether ArchSD considered the practice equitable to all tenderers. In this connection, whether Contractor D's bid was the lowest price among the proposals submitted for this project. If yes, please provide the price of the second lowest bid;

Regarding the variation works of \$23.8 million, not the full amount was related to variation works anticipated before tender award. Items (ii), (iii) & (iv) under paragraph 3.46(a) of the audit report came up only after the contract had commenced.

As the relevant variation works were also applicable to all tenderers, ArchSD considered that the practice was equitable to all tenderers. For information, Contractor D was the lowest price tenderer. The tender price of the lowest tender and the 2nd lowest tender were \$137.70 million and \$150.22 million respectively. The 2nd lowest tender price was \$12.52 million (i.e. 9.09%) higher than the lowest tender price.

- (iv) Details of the settlement claims of \$16.5 million, including nature of the disputes, negotiation between ArchSD and Contractor D and the settlement agreement;

Upon the issue of the draft final account by QS consultant to Contractor D for agreement in February 2012, Contractor D disagreed with the draft final account and served a notice of arbitration in May 2012 claiming for all disagreement items. The disagreement items involved the following:

1) Site levels

Contractor D disputed that the existing ground levels of the site were different from the reference site contours shown on the contract drawings, which resulted in additional import filling.

2) Prolongation costs

Contractor D disputed that the variation works of underground cable ducts and draw pits had caused critical delay to the programme and thus raised the claims for extension of time and its prolongation cost.

3) Methods of measurement

Contractor D argued that some Bills of Quantities (BQ) items did not fully describe the extent of the work.

4) Principles of valuing variations

The Contractor D claimed that non-contract rates instead of contract rates should be applied to some variation items.

#### 5) Absence of Architect's Instructions

Contractor D claimed that some works were variations that should be covered by Architect's Instructions, while the Architect considered that those works were related to the rectification of defective works.

Upon receiving the notice of arbitration, ArchSD sought legal advice within the Government. In this connection, the legal advisor employed an independent quantum expert (IQE) to study and analyze Contractor D's claims on individual disputed items. Legal views on the merits of the Contractor's claim and IQE's recommended figures on individual disputed items were provided for ArchSD's reference. Legal advice also considered that it would be a good deal for the Government if protracted and expensive arbitration could be avoided by securing the Contractor's agreement to settle the final account in total of \$178 million through negotiation. As the arbitration expenses would be substantial for both parties, ArchSD took the legal advice and proceeded to seek Financial Services and the Treasury Bureau (FSTB)'s approval in accordance with the Stores and Procurement Regulations to settle the disputes by negotiation.

In June 2013, FSTB's approval was obtained to negotiate with Contractor D for full and final settlement of all disputes. In July 2013, ArchSD formed a negotiation team to conduct negotiation with Contractor D to request for withdrawal of the notice of arbitration, and full and final settlement of all the disputes on a without prejudice basis. The negotiation was carried out in the same month and a lump sum settlement sum of \$16.5 million was reached by the parties. Upon further approval from FSTB, the results of the negotiation were recorded in a settlement agreement executed in August 2013.

- (f) Referring to the estimated capital cost of the project contains in the paper submitted to Public Works Subcommittee of Finance Committee on 15 June 2007 (R70/1/Info 6), how was the contingencies of \$11.6 million calculated and under what conditions would the contingencies be deployed;

The contingencies of \$11.6 million stated in the paper submitted to Public Works Subcommittee of Finance Committee on 15 June 2007 was allowance of around 7.5% of the total estimated cost of works for work or expenditure which could not be foreseen at the time of preparing the paper. Generally, allowing 7.5% contingency for an open space project was appropriate at that period of time.

- (g) Reasons for ArchSD to adopt a fixed price contract for implementing the project knowing that there might be variation and complications when developing the facilities on a restored landfill.

Generally, lump sum fixed price contract (instead of re-measurement contract) was adopted for implementing projects in which the client's requirements could be established at early stage and the detailed design information and drawings were available for estimation and preparation of tender documentation, which was the case of Jordan Valley Park.

Yours sincerely,



( Edward TSE )

for Director of Architectural Services

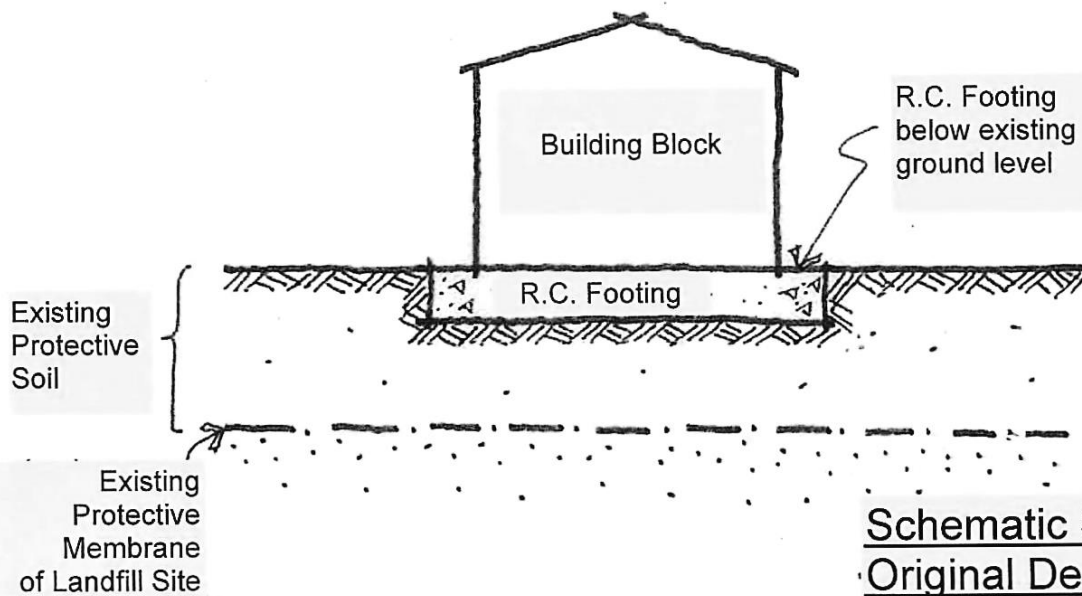
- c.c. Secretary for Environment (fax no. 2537 7278)  
Secretary for Home Affairs (fax no. 2591 5536)  
Director of Environment Protection (fax no. 2891 2512)  
Director of Leisure and Cultural Services (fax no. 2691 4661)  
Director of Home Affairs (fax no. 2574 8638)  
Secretary for Financial Services and the Treasury (fax no. 2147 5239)  
Director of Audit (fax no. 2583 9063)



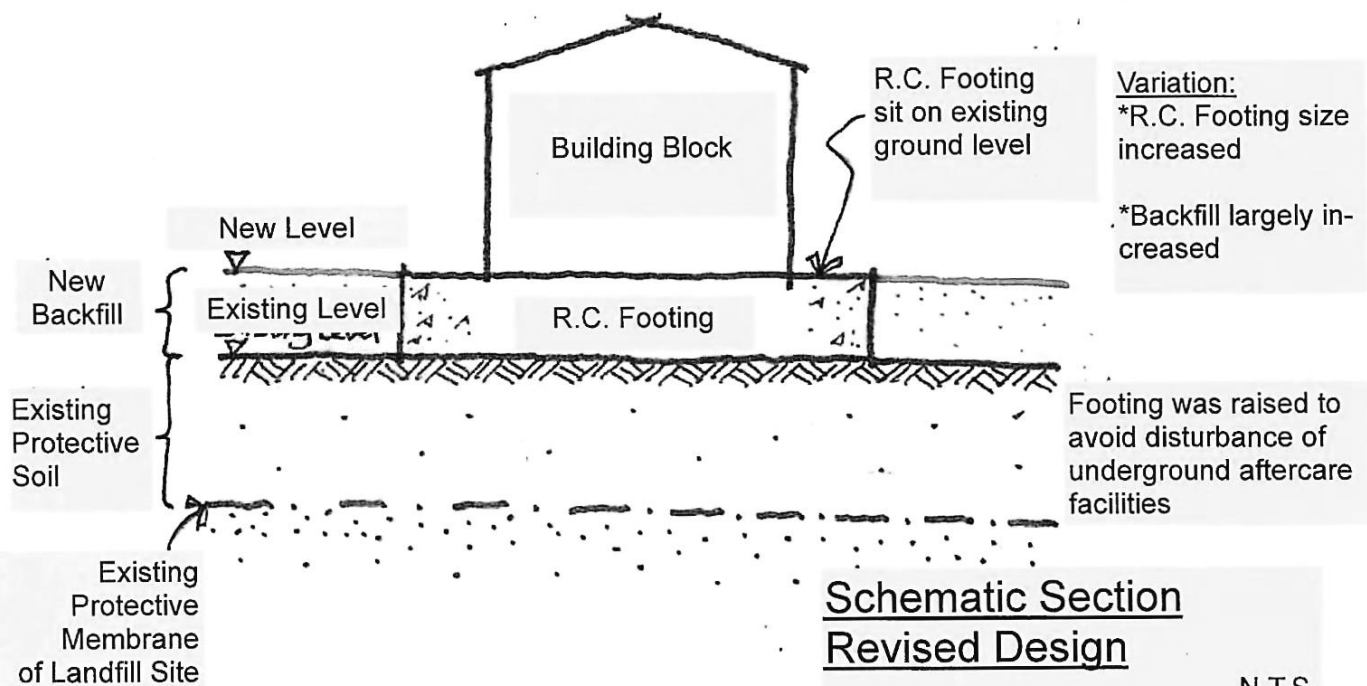
## Jordan Valley Park

### Changes of Building Blocks

### due to "Building Location Issue"



N.T.S.

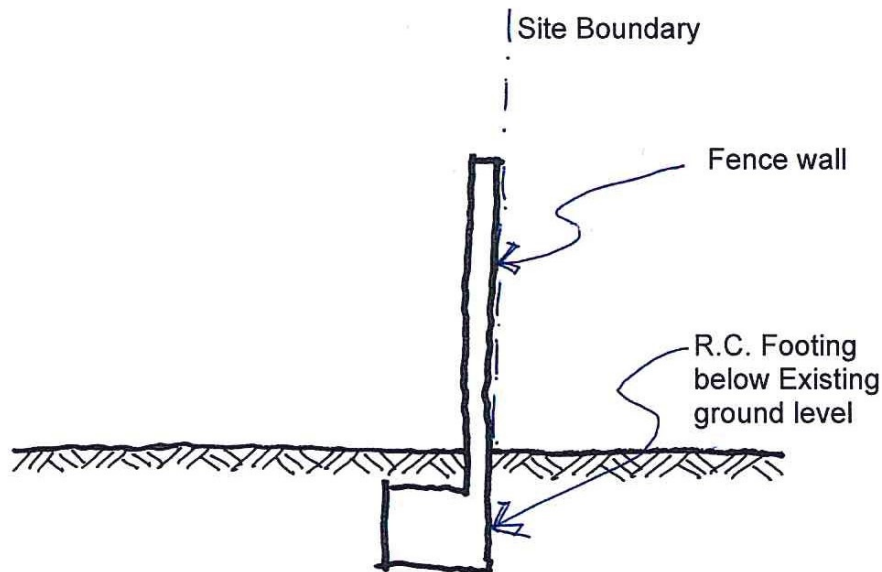


N.T.S.

Drawn on June 2018 for illustration

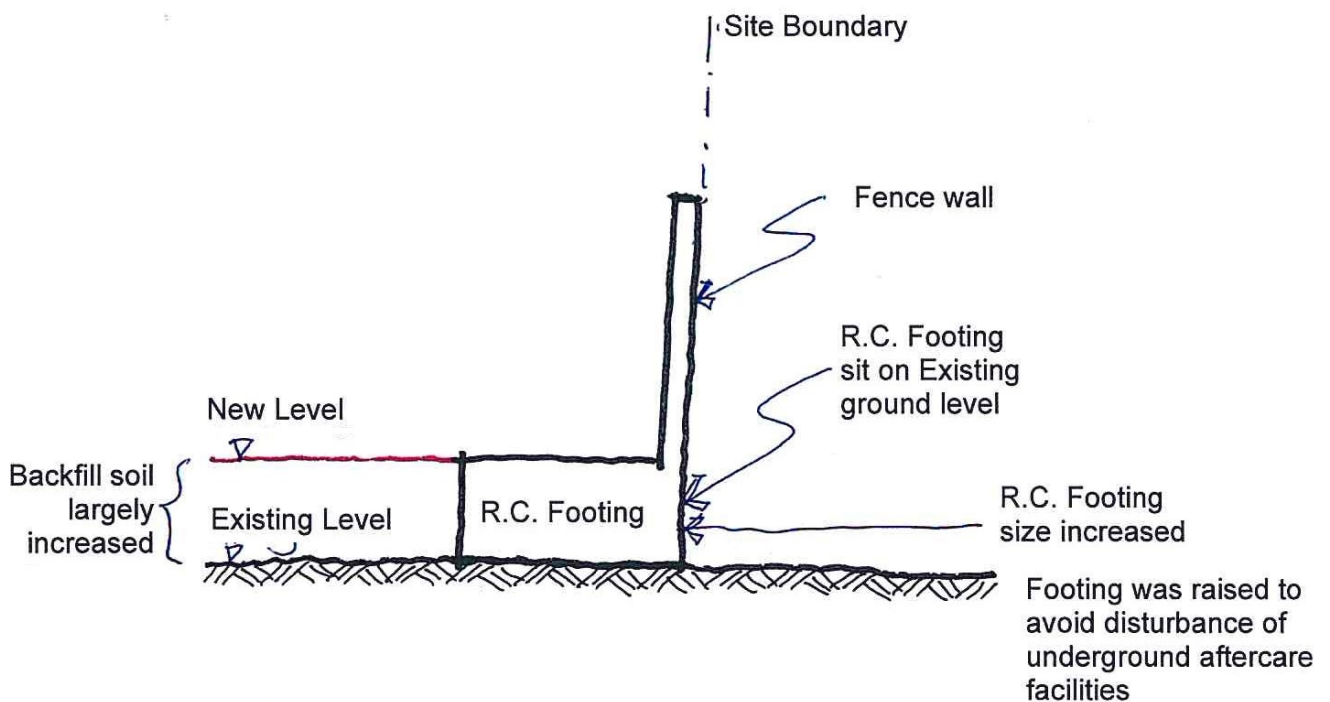
Changes of Fence Wall

due to Building Location Issue



Schematic Section - Original Design

N.T.S.



Schematic Section - Revised Design

N.T.S.

Drawn on June 2018 for illustration

B.D. Ref. no.  
F.S.D. Ref. no.

## ADDENDUM NO.1

LEGEND:-

- (W) WASTE RECEPTACLE
- (D) BARRIER-FREE OUTDOOR DRINKING FOUNTAIN (2 NOS.)
- (T) BARRIER-FREE OUTDOOR PUBLIC TELEPHONE
- (M) NATURAL STONE PATH FOR MANHOLE MAINTENANCE
- (S) BENCH W/ RAIN SHELTER

ArchSD Record No. Proj. Comp. Date  
A00369281 03/2010

REV. 14/06/07 ADDENDUM NO.1  
NO. DATE DESCRIPTION INITIAL

revision

Lead Consultant  
**andrew lee king fun & associates architects ltd.**  
18/F, Universal Trade Centre, 3 Ardour Road, C  
Hong Kong (Telephone: 00852 24220000 Fax: 00852 24220001)

Geotechnical & Structural Sub-consultant:  
**MEINHARDT (C&S) LTD.**

Building Services Sub-consultant:  
**PARSONS BRINCKERHOFF (ASIA) LTD.**

Environmental Sub-consultant:  
**CH2M HILL HONG KONG LIMITED**

Landscape Architectural Sub-consultant:  
**URBIS LIMITED**

job no. A-0613

DATE	SIGNED	DATE
DESIGNED	DENNIS YEUNG	
DRAWN	T. LEUNG	
CHECKED	ANDY CHU	
APPROVED	P.M. TANG	

consultancy agreement no. 9AQ004

project title

RECREATIONAL FACILITIES  
ON JORDAN VALLEY FORMER LANDFILL  
KWUN TONG

drawing title

OVERALL SITE PLAN

drawing no. AB/6004/GP004

scale 1 : 750

rev. 1

approved

signature:

date 27 JULY 2007

ARCHITECTURAL  
SERVICES  
DEPARTMENT

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SERVICES  
DEPARTMENT

Block 6  
Horticultural Education Centre

Variation Works:  
(i) add aluminium cladding to canopy

Block 7  
Green House

Block 8  
Toilet

Block 5  
Park Office

Variation Works:  
(i) add aluminium cladding to canopy

Block 3C & Block 3B  
Indoor Radio Controlled Model Car Racing Circuit & Covered Pit area

Variation Works:  
(i) add compact flexible surfacing works including road hump and marking paint  
(ii) add working benches and seats for Covered Pit area

Block 4  
Storerooms

Block 2  
Toilet

Block 10  
Plant Room

Block 1  
Toilet

Lawn  
Variation Works:  
(i) Replace original bollard lights by pole mounted lights

Outdoor Radio Controlled Model Car Racing Circuit

Variation works:  
(i) add high traction fine asphalt floor  
(ii) add noise barrier for driver's stand  
(iii) add Plexiglas wall

General Area:

Variation Works:  
(i) Revise details and addition of signages to general park areas



### Annex III - Chronology of communication between EPD and ArchSD

Date	Record of communication between EPD and ArchSD
Nov 2005	EPD's memo dated 10.11.2005 to LCSD copied to ArchSD enclosing the Contractor B's comments on the restrictions and requirements for the Afteruse development at the Jordan Valley Landfill (JVL).
Dec 2006	ArchSD consultant's letter dated 8.12.2006 submitting Ground Investigation works proposal for EPD comment.
Jan 2007	<p>ArchSD consultant's letter dated 8.1.2007 attaching a proposal for Landfill Facilities Modification works to EPD for comment.</p> <p>EPD's e-mail dated 11.1.2007 providing comments regarding the requirements for Landfill Gas Hazard Assessment to ArchSD.</p> <p>EPD's e-mail dated 22.1.2007 providing comments from Contractor B to ArchSD consultant's proposal on restoration facilities modification proposal.</p> <p>ArchSD consultant's letter dated 23.1.2007 submitting Preliminary Environmental Review report to EPD.</p> <p>Meeting between EPD, Contractor B, ArchSD, ArchSD's consultant was held on 24.1.2007 for the modification works of existing landfill facilities.</p>
Feb 2007	<p>Meeting between EPD, LCSD, ArchSD, ArchSD's consultant and Contractor B was held on 7.2.2007 regarding the contractual arrangement of the project.</p> <p>Joint site visit was held on 12.2.2007 among EPD, Contractor B, ArchSD and ArchSD consultant.</p> <p>ArchSD consultant's letter dated 14.2.2007 submitting the detailed design for Contractor B checking.</p>
Mar 2007	EPD's letter dated 1.3.2007 informing Contractor B that the Contractor of Afteruse facilities would enter the site from 2008 to 2010.

	<p>ArchSD's memo dated 5.3.2007 seeking EPD advice on the requirement for engagement of an Independent Checker.</p> <p>Meeting between EPD and ArchSD was held on 22.3.2007 for the responsibility of modification works for landfill facilities and engagement of Independent Checker.</p> <p>ArchSD consultant's e-mail dated 27.3.2007 acknowledging receipt of technical specification from Contractor B.</p> <p>ArchSD's memo dated 28.3.2007 seeking EPD advice on the requirement for engagement of Independent Checker.</p> <p>ArchSD's e-mail dated 29.3.2007 seeking EPD comment on the draft document for invitation of quotation for engagement of Independent Checker.</p>
Apr 2007	EPD e-mail dated 2.4.2007 providing comments to ArchSD for the invitation of quotation for Engagement of Independent Checker.
May 2007	The landfill gas hazard assessment consultant's (engaged by ArchSD) letter dated 31.5.2007 submitting the Landfill Gas Hazard Assessment Report to EPD.
Sep 2007	ArchSD's memo dated 25.9.2007 providing drawings certified by Independent Checker to EPD.
Oct 2007	<p>The landfill gas hazard assessment consultant's (engaged by ArchSD)'s letter dated 2.10.2007 submitted revised Landfill Gas Hazard Assessment Report to EPD.</p> <p>EPD's memo dated 8.10.2007 to LCSD copied to ArchSD enclosing the</p>

	<p>Contractor B's comments on the restrictions and requirements for the Afteruse development at the Jordan Valley Landfill and requesting the finalized layout plan and site handover date.</p> <p>The landfill gas hazard assessment consultant's (engaged by ArchSD) letter dated 16.10.2007 submitted revised Landfill Gas Hazard Assessment Report to EPD.</p> <p>EPD's letter dated 17.10.2007 to the landfill gas hazard assessment consultant's (engaged by ArchSD) advising no further comments on the Landfill Gas Hazard Assessment Report on 16.10.2007.</p> <p>EPD's letter dated 22.10.2007 to Contractor B enclosing ArchSD's detailed design drawings with Independent Checker's certification.</p> <p>EPD's e-mail dated 24.10.2007 informing ArchSD that Contractor B remarked many aspects of the design were deviated from the design requirements.</p>
Dec 2007	<p>Contractor B emailed dated 5.12.2007 informing ArchSD that the some of sub-soil drain pipes were located under the foundation of some building blocks.</p>

財 經 事 務 及 庫 務 局  
( 庫 務 科 )



FINANCIAL SERVICES AND  
THE TREASURY BUREAU  
( The Treasury Branch )

香 港 金 鐘 添 美 道 二 號  
政 府 總 部 二 十 四 樓

24/F, Central Government Offices  
2 Tim Mei Avenue  
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電話號碼 Tel. No. : (852) 2810 2257  
傳真號碼 Fax No. : (852) 2869 4519  
本函檔號 Our Ref. : L/M(8) to TsyB T 00/810-6/71/0  
來函檔號 Your Ref. : CB4/PAC/R70

By fax and email  
12 July 2018

Mr Anthony Chu  
Clerk to Public Accounts Committee  
Legislative Council Secretariat  
Legislative Council Complex  
1 Legislative Council Road  
Central, Hong Kong  
[email address: ahychu@legco.gov.hk]

Dear Mr Chu,

**Chapter 1 of the Director of Audit's Report No. 70**

**Management of restored landfills**

Thank you for your letter dated 28 June 2018 to Secretary for Financial Services and the Treasury.

I append below the required information –

(a) Monitoring of non-governmental bodies' afteruse facilities at restored landfills

The project proponents are required to follow the prevailing requirements for public works projects funded under Capital Works Reserve Fund. For the pre-construction studies and design of the proposed projects requiring funding support from the Government, the project proponents shall seek funding approval from the Finance

Committee (“FC”) (via the Public Works Subcommittee (“PWSC”)) of Legislative Council (“LegCo”), or from this Bureau under delegated authority (where the relevant cost estimate is below \$15 million). For the main works under the projects, again depending on the relevant cost estimate, the project proponents shall seek funding approval from FC (via PWSC), or from this Bureau under delegated authority as appropriate. Under the Funding Scheme, the total capital grant is subject to a cap of \$100 million (in money-of-the-day prices) per project.

(b) Construction of Jordan Valley Park

As laid down in the Stores and Procurement Regulations (“SPRs”), procuring departments are responsible for drawing up tender specifications to meet their specific procurement needs, defining the contract requirements and conducting tender exercises in a manner meeting the government procurement principle of maintaining open and fair competition. Procuring departments are also responsible for project implementation and contract management. If and when there are any changes to the contract requirements after contract award, procuring departments should execute variations to contracts according to the authority provided in Appendix V(B) to SPRs.

In accordance with SPR 375(a), upon conclusion of tender evaluation, the procuring departments should prepare a tender report containing a clear recommendation in the standard format for consideration by the relevant tender board. As set out in the standard tender report format at Appendix III(I) to SPRs, apart from the usual information required, procuring departments should also include in the tender report any special circumstances applicable to the tender recommendation. In general, when considering whether to initiate a change to the tender requirement at the tender stage or to pursue the change at the post-tender stage through a contract variation, the procuring departments should take into account the need to maintain open and fair competition, as well as relevant operational considerations.

The Central Tender Board (“CTB”) will consider the tender report for a works contract with a value exceeding \$100 million<sup>1</sup>. For the case in question, CTB was not informed of the need to change the design of the project in the tender report submitted by the Architectural Services Department (“ArchSD”) in November 2007. We note in paragraph 3.48 of the captioned Audit Report that ArchSD considered that the building location issue could be resolved at the post-contract stage and therefore did not inform CTB of the change in design.

---

<sup>1</sup> The CTB threshold for works tenders was increased from over \$30 million to over \$100 million since May 2016.



I should be grateful if you could relay the above information to Members of the Public Accounts Committee for reference.

Yours sincerely,



( Miss Pat Chung )  
for Secretary for Financial Services  
and the Treasury

c.c. Secretary for Environment (fax no.: 2537 7278)  
Secretary for Home Affairs (fax no. 2591 5536)  
Director of Environmental Protection (fax no.: 2891 2512)  
Director of Leisure and Cultural Services (fax no.: 2691 4661)  
Director of Architectural Services (fax no.: 2810 7341)  
Director of Home Affairs (fax no.: 2574 8638)  
Director of Audit (fax no.: 2583 9063)

本署檔案  
OUR REF: EP R80/AUDIT/2/3 (2017)  
來函檔案  
YOUR REF: CB4/PAC/R70  
電話  
TEL NO: 2872 1750  
圖文傳真  
FAX NO:  
電子郵件  
E-MAIL:  
網址  
HOME PAGE: <http://www.epd.gov.hk>

**Environmental Protection Department  
Headquarters**

16/F, East Wing,  
Central Government Offices,  
2 Tim Mei Avenue,  
Tamar, Hong Kong



環境保護署總部  
香港添馬添美道 2 號  
政府總部東翼 16 樓

By Fax

Clerk to Public Accounts Committee  
Legislative Council Secretariat  
Legislative Council Complex  
1 Legislative Council Road  
Central, Hong Kong  
(Attn: Mr. Anthony CHU)

12 July 2018

Dear Sir,

**Public Accounts Committee**  
**Consideration of Chapter 1 of the Director of Audit's Report No.70**  
**Management of Restored Landfills**

Thank you for your letter dated 28 June 2018. Please find in the enclosed appendix the information requested. If you need any further information, please contact the undersigned.

Yours faithfully,

(FONG Kin-wa)

for Director of Environmental Protection

Encl.

c.c.	Secretary for Environment (fax no. 2537 7278)	} w/o encl.
	Secretary for Home Affairs (fax no. 2591 5536)	
	Director of Leisure and Cultural Services (fax no. 2691 4661)	
	Director of Architectural Services (fax no. 2810 7341)	
	Director of Home Affairs (fax no. 2574 8638)	
	PEO(G), FSTB(TsyB) (Mike WM CHENG/TSYB/HKSARG)	
	Director of Audit (fax no. 2583 9063)	

## Appendix- EPD's response to PAC's request for information

Q(a)	referring to Table 5 in paragraph 4.3 on land licences granted by the Environmental Protection Department ("EPD") and the projects under the Restored Landfill Revitalisation Funding Scheme ("the Funding Scheme"), please set out in a table the similarities and differences of the two modes, including but not limited to invitation for applications, consideration and approval of applications, assistance, if any, provided to the successful applicants by the Administration, and monitoring of compliances;						
	<p>Referring to the land licences in Table 5 of the Audit Report and the projects under the Restored Landfill Revitalization Funding Scheme (“the Funding Scheme”), details of the application procedures and monitoring during the development and operation of the afteruse facilities of the two modes are as follows:-</p> <table><tr><th></th><th>Land Licences</th><th>Projects under the Funding Scheme</th></tr><tr><td>Modes of inviting applications</td><td>Except for the Temporary Golf Driving Range, the licensees of the remaining four afteruse facilities are national sports associations (NSAs) of the Sports Federation and Olympic Committee of Hong Kong, China. All these NSAs had first submitted to the Home Affairs Bureau (HAB) or the Leisure and Cultural Services Department (LCSD) their preliminary proposals for the development of afteruse facilities at restored landfills. Upon obtaining HAB’s policy support, they then formally submitted applications to the Environmental Protection Department (EPD). For the Temporary Golf Driving Range, Licensee C had submitted the proposal directly to the EPD. The EPD then consulted the relevant bureaux/departments and upon their support, granted the land</td><td>Open for all eligible organisations (i.e. Non-profit making organisations (NPOs) or NSAs) to apply to the EPD within specified period.</td></tr></table>		Land Licences	Projects under the Funding Scheme	Modes of inviting applications	Except for the Temporary Golf Driving Range, the licensees of the remaining four afteruse facilities are national sports associations (NSAs) of the Sports Federation and Olympic Committee of Hong Kong, China. All these NSAs had first submitted to the Home Affairs Bureau (HAB) or the Leisure and Cultural Services Department (LCSD) their preliminary proposals for the development of afteruse facilities at restored landfills. Upon obtaining HAB’s policy support, they then formally submitted applications to the Environmental Protection Department (EPD). For the Temporary Golf Driving Range, Licensee C had submitted the proposal directly to the EPD. The EPD then consulted the relevant bureaux/departments and upon their support, granted the land	Open for all eligible organisations (i.e. Non-profit making organisations (NPOs) or NSAs) to apply to the EPD within specified period.
	Land Licences	Projects under the Funding Scheme					
Modes of inviting applications	Except for the Temporary Golf Driving Range, the licensees of the remaining four afteruse facilities are national sports associations (NSAs) of the Sports Federation and Olympic Committee of Hong Kong, China. All these NSAs had first submitted to the Home Affairs Bureau (HAB) or the Leisure and Cultural Services Department (LCSD) their preliminary proposals for the development of afteruse facilities at restored landfills. Upon obtaining HAB’s policy support, they then formally submitted applications to the Environmental Protection Department (EPD). For the Temporary Golf Driving Range, Licensee C had submitted the proposal directly to the EPD. The EPD then consulted the relevant bureaux/departments and upon their support, granted the land	Open for all eligible organisations (i.e. Non-profit making organisations (NPOs) or NSAs) to apply to the EPD within specified period.					

		licence under the delegated authority of the Lands Department (LandsD).	
	Process of considering and approving the applications	The EPD would consult relevant B/Ds on the application for the proposed afteruse projects. If supported by the B/Ds (including being satisfied that the NSA is capable of constructing and operating the proposed project), and there being no other applications received for using the subject land at the restored landfills, the EPD would then grant the land licence to the applicant under the delegated authority of the LandsD.	<p>To take the Funding Scheme forward, the EPD has established a Steering Committee (SC) to advise the Government on the operational arrangement of the Funding Scheme and assist in assessing the applications and monitoring the progress of the approved projects. The SC would assist in assessing the applications based on the established assessment criteria, including:</p> <p>(A) Screening criterion</p> <ul style="list-style-type: none"> <li>• Engineering and environmental feasibility of the project</li> </ul> <p>(B) Assessment criteria</p> <ul style="list-style-type: none"> <li>• Technical aspects of the project;</li> <li>• Project's benefits and acceptance by the community;</li> <li>• Financial viability and sustainability of the project; and</li> <li>• Management capability of the applicant.</li> </ul> <p>The Scheme Secretariat would circulate all applications to relevant B/Ds for comment, and consult relevant District Councils (DCs) on the proposed uses. The Secretariat would</p>

		<p>consolidate the comments received and then convey them to the SC for consideration.</p> <p>The selected organisations are required to prepare more detailed proposals taking into account the comments received during the assessment period. Subject to the satisfaction of the SC with the detailed proposals, the SC would recommend the Secretary for the Environment to grant an approval-in-principle to the selected organisations to take forward the projects. The selected organisations would then carry out the design and planning of the projects, and prepare the detailed cost estimates of the works. Regarding the capital works funding of each project, the EPD would follow the Government's established procedures including seeking the necessary funding approval from the Finance Committee of the Legislative Council after consulting relevant DCs.</p>
	Assistance provided to the licensees (successful applicants)	<p>Given that the after-use facilities were to be developed by the applicants on a self-financing basis, the EPD needed not provide financial assistance to the applicants.</p> <p>Under the Funding Scheme, funding support in respect of (i) a capital grant to cover the cost of capital works and related matters, subject to a cap of \$100 million (in</p>

		<p>The EPD and the relevant B/Ds would provide the licensees technical information and advices such as the monitoring data collected during the aftercare period of the restored landfills, other technical reports etc., to allow the licensee to fully address the conditions of the restored landfill during the design stage and complete its design and construction of suitable facilities at the restored landfills as soon as possible.</p>	<p>money-of-the-day (MOD) prices) per project; and (ii) a time-limited grant to meet the starting costs and operating deficits (if any) for a maximum of the first two years of operation, subject to a cap of \$5 million (in MOD prices) per project, would be provided to the selected organisations.</p> <p>During the invitation of applications, the EPD would provide applicants with the detailed technical information kit of each restored landfill, and arrange briefings and site visits to the restored landfills so as to facilitate the applicants to take due consideration of the site characteristics and development constraints of the restored landfills. Once the suitable applicants are selected, the EPD would provide further technical details to the selected organisations, such as the monitoring data collected during the aftercare period of the restored landfills, other technical reports etc., so as to facilitate the selected organisations to take due consideration of the site conditions and to carry out informed design and development.</p> <p>In addition, the EPD would also provide other assistance to the selected organisations in taking forward their</p>
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			projects, including assisting them to timely consult the stakeholders (e.g. DCs), liaising with relevant government departments to obtain professional advice (e.g. compliance with the requirements of relevant ordinance etc.) and preparing the necessary information for funding application etc.
	Monitoring of licensees	In accordance with the licence conditions, the EPD would request the applicant to submit detailed construction plans and programmes; and carry out inspections and monitor the construction progress and operation of the afteruse facilities.	The SC and the EPD would closely monitor the approved projects. The selected organisations are required to submit documents such as progress reports and audited financial statements to the EPD regularly. The EPD and relevant government departments would also conduct site visits and inspections from time to time to ensure the development and operation of the approved projects comply with the terms and conditions of the land licences.
Q(b)	for the land licences granted in Table 5, please advise:		
(i)	criteria in classifying the facilities as temporary or permanent, and differences in terms of licence conditions, duration of licence, etc. between temporary and permanent licences;		
	The EPD has been promoting actively the development of various beneficial uses at the restored landfills. In case the land in restored landfills would be developed for long-term uses (such as recreation parks or sitting-out areas) while the detailed construction programme was yet to be finalized, the EPD would try to use the lands for suitable temporary beneficial purposes on condition that the applicant had obtained policy supports from the relevant bureaux. In general, if there is already an imminent development plan, the land licences will be granted for a shorter period (about less than 3 years) and there will also be condition for		

early termination of the land licence (usually with an “advance notice” period of 6 to 9 months). The EPD will consult relevant B/Ds before issuing land licence. For the land licences in Table 5 of the Audit Report, the development plans of the corresponding restored landfills are as follows:

<b>Afteruse facilities</b>	<b>Licence period</b>	<b>Long-term development plan of the restored landfills</b>
Temporary Cricket Grounds	3 years	Kwai Chung Park
Temporary Shooting Range	2 years	Included in Batch 1 of the Funding Scheme
Temporary Golf Driving Range	2 years	Golf Course (Non-in-situ land exchange)

For the remaining two land licences, (i.e. the BMX Park and Football Training Centre in Table 5 of the Audit Report), having considered that the proposed recreational uses would not affect the long-term development plan of the respective restored landfills; and with the policy support from the relevant bureau, their land licences were granted with a longer licensing period. This includes (i) the 21-year licence issued to Licensee D in 2008 for the development of BMX Park at the restored Gin Drinkers Bay Landfill (GDBL); and (ii) the 10-year licence issued to Licensee B in 2016 for the development of Football Training Centre at the restored Tseung Kwan O Stage 1 Landfill (TKOL-I).

(ii) factors in determining the duration of licence and reasons for the significant difference between licence duration of the temporary golf driving range (15 years) and the temporary shooting range (two years);

Please refer to our response to (b)(i), considerations in approving land licences.

The land licences for Temporary Golf Driving Range and Temporary Shooting Range were first granted in 2003 and 2016 respectively. Land licence for the Temporary Golf Driving Range at the restored Shuen Wan Landfill (SWL) was renewed subsequently for 7 times, with extended periods ranging from 1 to 3 years. Hence, the licensing periods of the Temporary Golf Driving Range (with licence periods of 1 to 3 years) and the Temporary Shooting Range (with licensing period of 2 years) are of similar time duration.

(iii) reasons for EPD to renew the temporary licence for Licensee C seven times (one to three years in each renewal) for a consecutive period of 15 years and why EPD and Licensee C could not identify a permanent usage for the site for such a long period of time (Note 1 to Table 5 refers); during processing the renewal applications, whether consideration had been given to advertising the site for public use so that other organizations could also make applications



	<p>The relevant B/Ds have been following up the long-term development use of the restored SWL (i.e. developing into a permanent golf course) over a period of time.</p> <p>After the expiry of the first management agreement amongst the EPD, the then Provisional Regional Council and Licensee C, a land license was granted by the EPD to Licensee C to continue the operation of a Temporary Golf Driving Range in SWL in 2003. [Prior to the expiry of the land license in 2005, the land licence was extended to tie in with the proposed 9-hole golf course development programme proposed by the Hong Kong Golf Association (HKGA). As HKGA subsequently withdrew their proposal in early 2006] (Note: the information about HKGA is for PAC internal information only), the EPD, after consulting relevant B/Ds, carried out an open Expression of Interest exercise in 2009 to invite all interested parties to submit proposal on developing a 9-hole golf course. In parallel, the EPD, in collaboration with other B/Ds, was working to prepare for the planning, tendering and drafting of the detailed land lease terms, etc. Taking into account the time required for the applicant to carry out detailed design and associated Environmental Impact Assessment process, the land license was extended accordingly. Consequently, for conservation of the private land of high ecological value in Sha Lo Tung, the Government started to study the proposal of using the land in the SWL under the Public-Private-Partnership scheme; and ultimately announced in the Policy Address 2017 that the Chief Executive-in-Council had given in-principle agreement to the pursuit of a proposal for the contemporaneous surrender of private land with high ecological importance in Sha Lo Tung to the Government and granting of a piece of land at the SWL to the Sha Lo Tung Development Company Limited (the non-in-situ land exchange). The EPD has also extended the land licence of the Temporary Golf Driving Range to tie in with the latest developments.</p> <p>In view of the uncertainty of the development plan and timetable for the land disposal arrangement of the SWL, it would be difficult for other organizations/companies to invest in the temporary use of SWL in the absence of a definite long term afteruse timetable. Moreover, Licensee C had already invested in the infrastructure for the driving range and the EPD was satisfied with its operation and financial position, the EPD hence considered it more appropriate and cost-effective to extend the licence for Licensee C, while discussion on long term development continued, such that the Temporary Golf Driving Range would continue be opened for public beneficial use.</p>
(iv)	<p>given that in December 2016, Licensee E informed EPD that it would not use the 0.4 hectare area for any activities, please provide a chronology with details on the application by the licensee and granting of the licence, development of the shooting range by the licensee, reasons provided by Licensee E of not using the 0.4 hectare area for any activities, follow-up actions taken by EPD on Licensee E's use of this 0.4 hectare area and its existing operating situation of the temporary shooting range including its usage. Has the licence for the temporary shooting range been renewed? If yes, please provide details, such as the duration and any</p>

(v)	<p>new licencing conditions added. If no, please provide the updated progress;</p> <p>criteria for determining the renewal of licenses;</p>
	<p>For the application of Licensee E to develop part of the restored Pillar Point Valley landfill (PPVL) into two Temporary Shooting Ranges (with an area of 0.2 hectares and 0.4 hectares respectively), the EPD, upon HAB's policy support and no disagreement from other relevant government departments, issued a temporary land licence to Licensee E to develop two Temporary Shooting Ranges for two years in July 2016.</p> <p>Shooting sport is unique in nature, involves the use of firearms with considerable hazard, and must be carried out in a safe and regulated environment. Those who participate in shooting activities should pay attention to safety and the stewardship of firearms and facilities. Licensee E has informed the EPD that they would only set up one Temporary Shooting Range on the 0.2 hectares of licensed area, while the remaining 0.4 ha of land will be developed subject to actual operation.</p> <p>Since July 2016, a total headcount of 236 have participated in the shooting activities held at the Temporary Shooting Range at the restored PPVL. (Note: the above figure is for PAC internal reference only)</p> <p>PPVL has already been included in the Funding Scheme for developing long-term beneficial uses. After comprehensive consideration and with the policy support given by the relevant bureau and there being no disagreement from relevant departments, the EPD will renew the licence of Licensee E for one year (covering 0.2 ha of land) as a transitional arrangement to continue the beneficial use of the land and facilitate introduction of new licence conditions, if renewed later on. The EPD has also accepted the recommendations in the Audit Report, to review the relevant land licence conditions, and the work is expected to complete by the end of 2018.</p>
Q(c)	<p>what are the commissioning dates of the temporary cricket grounds and football training centre? Whether the licence of the temporary cricket grounds will be extended upon expiry in March 2019. Had the relevant District Council been consulted when cricket grounds were proposed and whether there is a community need for the facility?</p>
	<p>The constructions of the Temporary Cricket Grounds and Football Training Centre are largely completed. Earlier on, Licensee A had organized trial games at the Temporary Cricket Grounds for their members and expected to open the facility to members and general public in Q3 of 2018. In addition, Licensee B</p>

	<p>expected that the Football Training Centre would be put into operation in Q4 of 2018 and opened for use by members and the general public.</p> <p>Regarding the Kwai Chung Park development, the LCSD consulted the District Management Committee (DMC) of the Kwai Tsing District Council (KTDC) in 2013. The Committee at that time had agreed on the various recreational uses to be developed at the restored GDBL, including cricket grounds. Moreover, the LCSD and Licensee A also explained to the District Facilities Management Committee (DFMC) of the KTDC on 23 September 2015 in details the Temporary Cricket Grounds proposal which was supported by the DFMC. The EPD has received the application from Licensee A for renewing the land licence for the Temporary Cricket Grounds and advice from the relevant B/Ds is being sought.</p>
Q(d)	<p>referring to Table 6 of paragraph 4.5, reasons for the delays in completing the two afteruse facilities and whether the target completion dates as set out in the respective licences were over optimistic? When setting the target completion date in a land licence, has EPD taken into account the special constraints with restored landfills and informed the licensees about the complexities of the sites? What are the licencing fees for the two facilities? Do the licensees have to pay the licencing fees before the actual commissioning of the facilities?</p>
	<p>For items (a) and (b) in Table 6 of the Audit Report, the delays in the completion of Temporary Cricket Grounds and Football Training Centre were mainly due to the need for Licensee A and Licensee B to connect the necessary power and water supply for the facilities, and the more-than-expected time required to provide submissions for meeting the statutory requirements and to obtain the respective approvals. In addition, with a view to providing the public and its members with a more suitable environment for practising, Licensee A informed the EPD during construction (i.e. May 2017) that there was a need to carry out ground levelling works at the licensed area. To this end, in accordance with the land licence conditions, Licensee A submitted further relevant information (such as construction plan) to EPD and its restoration contractor for advice and approval. In the end, the Licensee A took another 6 months to complete such additional works.</p> <p>To tie in with the construction progress of the Football Training Centre, the EPD has been liaising with the HAB, Licensee B and its consultants, and giving advices to resolve design/technical problems. Due to the development constraints of restored landfills, the consultants of the Football Training Centre had to spend more time to obtain approvals from the relevant authorities (such as the Buildings Department and Geotechnical Engineering Office) for the design submissions.</p> <p>Despite the above, the EPD has all along been actively monitoring the development progress of afteruse developments, and providing assistance to the</p>

	<p>licensee, within the EPD's capacity and resources availability, for completing the soonest possible the afteruse facilities (e.g. approaching the Water Supplies Department to facilitate submission and approval of water-supply applications, according priority in vetting of licensees' design submissions, and actively participating in site coordination meetings).</p> <p>Since the Temporary Cricket Grounds and the Football Training Centre had both encountered different technical difficulties and limitations, they could not be completed on time as scheduled. The EPD will further enhance future communication with the relevant organizations and share with them the development experience before drafting or issuing the land licences. This will assist the licensee to understand the time required and potential challenges during design and construction of afteruse facilities at restored landfills, and avoid as far as practicable significant difference in the time gap between the actual completion date and target completion date as set out in the land licence.</p> <p>As set out in the land licences, the Licensee A and the Licensee B are required to pay a nominal rent (i.e. HK\$1.00 per year) for the use of the restored GDBL and the TKOL-I.</p>
Q(e)	<p>referring to paragraph 4.8, ways to enhance management of the BMX park and actions that has been/will be taken for improving the facility; has EPD sought assistance from other government departments e.g. the Leisure and Cultural Services Department ("LCSD") in this regard? Is the lack of park maintenance attributable to the licensee's financial difficulties and reasons for excluding the BMX facility from the Funding Scheme? What other assistance will be offered to the licensee to improve facility management?</p>
	<p>The international racing track at the BMX Park at the restored GDBL was temporarily closed for maintenance from October 2016 to December 2017. During that period, the licensee D had encountered difficulties in tendering and awarding the improvement and maintenance contract (for example, re-tendering was needed as qualified contractor could not be selected during the tendering process), leading to a more than expected time required for the track maintenance. But, the other facilities at the BMX Park remained open for public use.</p> <p>The EPD had been liaising with Licensee D to understand the cause of the hiccups in the maintenance works. During the maintenance period, the EPD also sought technical advice from the relevant B/Ds (such as selection of suitable surfacing materials for the track) to assist the licensee. Licensee D had been making every effort to follow up the maintenance work, and had continued to operate the remaining part of the BMX and the training courses in a self-financing manner. Given the above, the EPD did not find Licensee D not capable of continuing to develop and operate the facilities due to financial problem.</p> <p>In order to tie in with the 2009 East Asian Games, the land licence of the BMX</p>

	<p>Park was awarded to the Licensee D in July 2008, to design, construct and operate the BMX Park till 2029. However, the Funding Scheme was only rolled out in November 2015 to include restored landfills not yet developed for suitable facilities and opened to applications from non-profit making organizations or the NSAs (i.e. the licensed area of BMX Park was not included).</p> <p>The Government has been encouraging non-government organisations (including NSAs) to develop sports facilities on vacant government lands (including restored landfills) in a self-financing manner. If complying with the eligibility criteria, the non-government organisations can also apply for the Sir David Trench Fund for Recreation or other charitable funds (such as the Hong Kong Jockey Club Charities Trust) to finance their development plans.</p>
Q(f)	<p>according to paragraph 4.9, EPD informed the Audit Commission ("Audit") that it did not possess the expertise and capacity to monitor a licensee's compliance with the licence conditions and to ensure that a licensee would operate a high-quality facility and maximize facility utilization. Please advise whether EPD had sought assistance or advice from other government departments, such as LCSD in this regard? Is there any established mechanism for EPD to seek advice from LCSD or other relevant departments, or any form of collaboration between departments on the operation and maintenance of afteruse facilities on restored landfills? If yes, of the details and if not, the reasons for that. Why was the monitoring of afteruse facilities not delegated/transferred to LCSD or other appropriate departments?</p>
	<p>As the managing department of the restored landfills, the EPD is obliged to continuously take care of the overall maintenance and environmental monitoring work at the restored landfills (including the afteruse areas).</p> <p>The EPD has been maintaining communication with relevant B/Ds on the operation and maintenance of afteruse facilities in the restored landfills. During the preparation of land licence, the EPD will consult relevant B/Ds on suitable licence conditions for the proposed afteruse development. When the applicant has submitted details of the design, construction and operation of the afteruse facilities, the EPD will seek expert advice from relevant B/Ds on the proposed afteruse development.</p> <p>To further improve the management and monitoring of the afteruse facilities, the EPD will seek professional assistance and support from the relevant B/Ds as needed and in a timely manner to monitor the licensees' compliance with the licence conditions.</p>
Q(g)	<p>referring to paragraphs 4.11 and 4.12, please provide details on EPD's inspections to monitor licensees' compliance with license conditions and whether there is a checklist to facilitate monitoring by on-site staff? If yes, of the details and a copy of the checklist; if not, reasons why not using a checklist;</p>

	<p>EPD's main focus of monitoring non-governmental bodies' afteruse facilities at restored landfills is to ensure that the restored landfills are maintained in a safe condition during the entire aftercare period and that they are environmentally acceptable for appropriate afteruse. Hence, priority is given to the inspections of the aftercare works and environmental monitoring carried out by the landfill restoration contractors at the afteruse facilities. Nevertheless, EPD's site staff would also inspect the overall conditions of the afteruse facilities in general and conduct inspections from time to time to monitor the licensees' compliance with licence conditions and to record the results in the inspection form. However, as stated in the Audit's report, the inspection form was designed mainly for the purpose of environmental monitoring and did not cover specifically items related to the land licensees' compliance with land licence conditions.</p> <p>To further enhance the monitoring of the licensees' compliance with the licence conditions, EPD is now reviewing and updating the current inspection form as recommended in the Audit Report, to introduce items specific to monitoring compliance with land licence conditions. It is expected that the review will be completed by the end of 2018.</p>
Q(h)	referring to paragraphs 4.15 to 4.17, why had EPD not requested licensees to submit audited financial statements and in what ways could EPD assess licensees' ability and financial viability to maintain facility operations?
	<p>Over the years, EPD has required Licensee C to submit audited financial statements. Licensee C has submitted audited financial statements annually and EPD is satisfied with Licensee C's financial condition.</p> <p>As for other licensees, the afteruse facilities are being constructed by Licensees A and B and there was no requirement under the land licences for them to submit audited financial statements to EPD during the development stage of afteruse facilities.</p> <p>EPD considers that the 4 licensees (i.e. Licensee A, B, D and E) have all been proactively carrying out the construction works or upkeeping their normal operation, thus showing that they are both operationally and financially capable of running the afteruse facilities. To avoid imposing extra financial burden to the licensees by requesting them to submit audited financial statements (e.g. the licensees have to employ independent auditor to audit the financial statements), EPD did not request them to submit audited financial statements in the past. EPD will consider Audit's recommendations and request licensees to submit audited financial statements annually so as to assess in more details their ability to continually operate the afteruse facilities.</p>

Q(i)	referring to paragraph 4.20(d), actions taken/to be taken by EPD in taking forward the audit recommendations in paragraphs 4.19(d) and (e) and timetable for implementation;
	With reference to items (d) and (e) in paragraph 4.19 of the Audit Report, the EPD is reviewing the land licences that are soon to be renewed, so as to explore the possibility of introducing quantitative indicators for monitoring the licensees' performances in the future. The EPD will seek views from relevant B/Ds on this matter and expects the work will be completed by the first half of 2019.
Q(j)	in what ways has EPD drawn experience from management and operation of existing afteruse facilities in developing other restored landfills in future under the Funding Scheme;
	<p>The EPD has made reference to the experience of operation and management of existing afteruse facilities, and has adopted/will adopt the following arrangements when implementing the Funding Scheme:</p> <ul style="list-style-type: none"> <li>• enhance the engagement with the relevant DCs at an early stage such that views of the local community on the proposed facilities and operation could be considered earlier in the assessment process (we consulted the DCs concerned in September 2015 prior to the launching of Batch 1 of the Funding Scheme, and in January 2017 after receiving the Batch 1 applications);</li> <li>• liaise closely with the selected organisations to monitor the development of the project; if necessary, the EPD would assist in liaising with relevant government departments with a view to completing the facilities in a timely manner;</li> <li>• conduct site visits and inspections from time to time to ensure the development and operation of the approved projects comply with the terms and conditions of the land licences; and</li> <li>• request the selected organisations to submit documents such as progress reports and audited financial statements to the EPD regularly, so as to monitor the operation and financial status of the approved projects.</li> </ul> <p>In addition, the EPD will consider the recommendations given in the Audit Report, so as to strengthen the control on the implementation and operation of projects under the Funding Scheme.</p>
Q(k)	according to paragraph 4.27, two applications had been received for developing afteruse facilities at Ma Yau Tong Central Landfill and Tseung Kwan O Stage I Landfill. Have any applications received for the Pillar Point Valley, the third restored landfill in Batch 1 of the Funding Scheme? If no, has EPD reviewed the reasons why;
	For Batch 1 of the Funding Scheme, the EPD received a total of 27 applications, including seven applications each for Ma Yau Tong Central Landfill (MYTCL)

	and PPVL, and 13 applications for TKOL-I. For PPVL, as the SC considered that the applicants in general failed to address the various site constraints in developing their proposals, the SC did not recommend the Government to accept any application. The EPD will review the development constraints of PPVL and consider how best to address the issues concerned to facilitate the future afteruses of PPVL.
Q(l)	taking note of the delays in implementing Batch 1 of the Funding Scheme (paragraph 4.27 refers), what lessons have been drawn by EPD in enhancing the implementation of Batch 2 projects and whether reference has been made to overseas experience in developing restored landfills?
	<p>The EPD in conjunction with the SC will review the operation arrangement and the experience gained from Batch 1 of the Funding Scheme, including the flow of conducting various steps, the arrangement of DC consultation etc. so as to enhance the overall progress and operation of the Funding Scheme. The EPD will provide the outcome of the review and the proposed refinements to the SC for consideration, and then prepare the necessary refinement details for implementation in Batch 2 of the Funding Scheme.</p> <p>The EPD has made reference to relevant overseas experience during the consideration of afteruses of restored landfills such as golf driving range, football pitch, recreational facilities, walking/jogging trail, park, lawn etc. Under the Funding Scheme, the EPD welcomes any innovative proposals from applicant organisations which are compatible with the development constraints, technical and planning requirements of the restored landfills.</p>
Q(m)	the latest progress of inviting applications for Batch 2 projects;
	The SC considered that the restored landfills available should be launched in batches so that the operating details of the Funding Scheme could be refined after taking account of the experience from the first batch. The first project under Batch 1 of the Funding Scheme is now at the stage of preparing the Technical Feasibility Statement (TFS) following the established procedures of public works projects. Upon the completion of TFS of the Batch 1 projects, the EPD will commence the review of Batch 1 of the Funding Scheme. It is expected that the outcome of the review and the proposed refinements could be provided to the SC for consideration in 2019, the EPD will then develop the refinement details and relevant application information and arrangement for Batch 2 of the Funding Scheme.
Q(n)	please provide guidelines used by EPD/Steering Committee on the Funding Scheme in vetting the capability and suitability of the proposals received and what assistance, if any, would be offered, to help speed up the development of feasible and approved proposals;



	<p>The assessment procedures, criteria and requirements etc. are set out in the “Guide to Application” (Annex 1) prepared for the Funding Scheme. The “Guide to Application” is also made available to all applicants for reference so that they could understand the details, eligibility and assessment requirements etc. of the Funding Scheme.</p> <p>Apart from providing funding support to the selected organisations, the EPD would also assist them to take forward their projects, including assisting them to timely consult the stakeholders (e.g. DCs), liaising with relevant government departments to obtain professional advice (e.g. compliance with the requirements of relevant ordinance etc.) and preparing the necessary information for funding application etc.</p>
Q(o)	whether licensees A to E in Table 5 can apply for the Funding Scheme to further enhance and develop their facilities, if yes, of the details and if not, reasons for that;
	<p>The purpose of the Funding Scheme is to provide funding support for NPOs and NSAs to develop recreational facilities or other innovative proposals at the seven restored landfills (Note 1) which do not have development plan yet. The grant provided under the Funding Scheme is not applicable to the projects or facilities shown in Table 5 of the Audit Report. If the licensees in Table 5 are interested in applying the grant under the Funding Scheme for their projects at the restored landfills, the EPD would need to terminate their land licences earlier and include such restored landfills into the Funding Scheme for open applications from interested organisations (includes the licensees in Table 5). The EPD will then consider all applications in accordance with the assessment procedures of the Funding Scheme, and there is no guarantee that the applications submitted by the licensees in Table 5 will be selected.</p> <p>(Note 1: There are seven restored landfills under the Funding Scheme, namely Ma Yau Tong Central Landfill, Ma Yau Tong West Landfill, Ngau Tam Mei Landfill, Pillar Point Valley Landfill, Siu Lang Shui Landfill, Tseung Kwan O Stage I Landfill and Tseung Kwan O Stage II/III Landfill.)</p>
Q(p)	in May 2015, the Finance Committee approved non-recurrent funding of \$40 million, what are the uses of this funding and how much has been used;
	The non-recurrent funding of \$40 million under the Funding Scheme is the grant for selected applicants to meet the starting costs and operating deficits (if any) for the first two years of operation, subject to a cap of \$5 million (in MOD prices) per project. Since projects under the Funding Scheme are yet to commence operation, such non-recurrent funding has not been used for the time being.
Q(q)	staff deployed to manage the Funding Scheme and the estimated annual costs, their ranks and job duties, whether they have the relevant experience/expertise of vetting and assessing

	funding applications, project management and ensuring compliance with the relevant project terms and conditions.
	<p>The staff deployed to manage the Funding Scheme includes 2 Senior Environmental Protection Officers, 2 Environmental Protection Officers, 1 Senior Environmental Protection Inspector, 1 Environmental Protection Inspector and 1 Assistant Clerical Officer, and the annual cost is about \$5.3M (calculated based on the notional annual mid-point salary of 2018-19). Their duties include providing secretariat and professional support to the SC, inviting and processing applications, consulting DCs and stakeholders, liaising with relevant B/Ds for professional advice, assisting the SC in the assessment of applications, assisting the selected organisations to apply for grant and implement the revalidation projects, overseeing the implementation and operation of revalidation projects etc. The staff concerned has relevant project management and enforcement experience, and they will seek professional advice and assistance from relevant B/Ds if necessary.</p>

**Environmental Protection Department**  
**July 2018**

# **Restored Landfill Revitalisation Funding Scheme**

## **Guide to Application**



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# Restored Landfill Revitalisation Funding Scheme

## Guide to Application

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**Note:**

**The contents of this Guide may be revised and updated during the implementation of the Scheme. Subsequent revisions will be promulgated via the website of Environmental Protection Department on Restored Landfill Revitalisation Funding Scheme ([www.epd.gov.hk/epd/rlrfs](http://www.epd.gov.hk/epd/rlrfs)).**

## 1. Introduction

### 1.1 Background

1.1.1 There are 13 closed landfills in Hong Kong which were restored between 1997 and 2006 to minimise their potential adverse impacts on the environment and to render them safe for beneficial use. The Government has started converting restored landfills into recreational facilities such as recreational ground, sports facility and park. As of today, six restored landfills have already been fully developed for public use. This successful experience showcases that restored landfills can be turned into gainful and pleasant facilities for enjoyment by the general public.

1.1.2 To expedite the development of gainful facilities at restored landfills, the Chief Executive announced in the Policy Address 2014 that the Government has earmarked \$1 billion to set up a **Restored Landfill Revitalisation Funding Scheme** (hereafter referred to as “the Scheme”) to fund the development of recreational facilities or other innovative proposals at restored landfill sites so that the community could benefit from these facilities at the earliest opportunity. The Scheme will be open to applications from Non-Profit making Organisations (NPOs) or National Sports Associations (NSAs).

1.1.3 Among the 13 restored landfills in Hong Kong, the following seven sites are currently available for development under the Scheme:-

- (a) Ma Yau Tong Central Landfill (Kwun Tong);
- (b) Ma Yau Tong West Landfill (Kwun Tong);
- (c) Ngau Tam Mei Landfill (Yuen Long);
- (d) Pillar Point Valley Landfill (Tuen Mun);
- (e) Siu Lang Shui Landfill (Tuen Mun);
- (f) Tseung Kwan O Stage I Landfill (Sai Kung); and

(g) Tseung Kwan O Stage II/III Landfill (Sai Kung).

1.1.4 Applications will be invited in batches. The Government is now launching Batch I of the Scheme, and applications for the following restored landfill sites are invited:

(a) Ma Yau Tong Central Landfill;

(b) Pillar Point Valley Landfill; and

(c) Tseung Kwan O Stage I Landfill.

1.1.5 The roll out date for Batch I of the Scheme is 27 November 2015, and the application deadline is 12:00 noon, 29 April 2016.

1.1.6 Invitation for applications of the remaining restored landfills will be made and announced at a later period in 2016.

## **1.2 Objectives of the Scheme**

1.2.1 The Scheme is launched with a view to expediting the development of recreational facilities or other innovative applications at the restored landfill sites. Specifically, the objectives of the Scheme are to:

(a) put restored landfills into good and innovative uses;

(b) expedite the development of gainful afteruses at restored landfills so that the community can benefit from them at the earliest opportunity; and

(c) promote active public participation in the development of suitable facilities at the restored landfills.



### **1.3 General development constraints and possible uses of restored landfills**

- 1.3.1 There are various restoration facilities installed at the restored landfill site to manage the landfill gas and leachate generated from the site (e.g. the landfill gas management system, the leachate collection management system and the engineered capped layer). These restoration facilities would pose considerable restrictions on the development of afteruse on the restored landfills.
- 1.3.2 In addition, to ensure the safety of the restored landfill site, the landfill restoration contractor will undertake aftercare works at the site such as operation of the landfill gas and leachate collection and management systems, carrying out of environmental monitoring of the landfill gas emission and ground water contamination etc.
- 1.3.3 The following is a list of general development constraints at the restored landfill:
- (a) Loading limit on the restored landfill surface - To avoid causing damage to the capping system of the restored landfill, as well as other restoration facilities underneath, afteruse facility shall not exceed the maximum surcharge loading of the landfill surface. Besides, no piling at the landfill site or excavation of the capping system is allowed. Loading limit of the restored landfill site may vary from one landfill site to another. Development of any facility on the landfill surface shall be carried out strictly in compliance with the loading limit.
  - (b) No interference to restoration facilities and aftercare works – There are a number of restoration and aftercare facilities such as underground landfill gas and leachate management systems, environmental monitoring wells etc. distributed on the restored landfill surface to facilitate the carrying out of aftercare works. Any afteruse development shall not interfere the proper operation of these restoration and aftercare facilities, cover or hinder the carrying out of aftercare works at these facilities. If this is not possible and relocation of these facilities is required, these

facilities should be properly relocated by a specialist contractor.

- (c) Settlement and geotechnical condition of the landfill site - Due to the diverse nature and depths of the waste buried in the landfill, differential settlement of the landfill surface may occur. Nevertheless, after completion of the restoration works, the settlement levels in these restored landfills are mostly limited to a few millimeters per year.
- (d) Landfill gas<sup>1</sup> hazard - With the completion of the restoration works, restored landfills are safe for use and landfill gas emission is under control and management. Nevertheless, special attention should still be given in respect of the afteruse development on (or adjacent to) restored landfills to ensure their intended uses are safe<sup>2</sup>.
- (e) Lack of proper access within the site – As restored landfills were originally developed for the dumping of waste and not for other uses, there is generally no proper or up to public road standard access or emergency access within the landfill sites or to the flat areas of the landfill sites.
- (f) Lack of public utilities - There is generally no provision of water supply, electricity, public drainage / sewerage system nor other public utilities at the restored landfill site.
- (g) Slope stability – Restored landfill sites are not purposely designed for any kind of above ground development. These sites comprise mainly slopes with limited flat area. Afteruse development should not affect the stability of slope(s) of the landfill site for safety reason.

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<sup>1</sup> Landfill gas is a generic term used to describe the mixture of gaseous product generated as a result of the waste decomposition in landfills. It is both flammable and asphyxiating, and, as a consequence, it has the potential to cause fire, explosion or asphyxiating.

<sup>2</sup> Applicant, upon selected, is required to carry out a Landfill Gas Hazard Assessment for their proposed project.

1.3.4 Most of the restored landfill sites are zoned as “Open Space”, “Green Belt” or “Recreation”. Given the general site restrictions as indicated in section 1.3.3 and the existing land use planning, restored landfills are mainly used for recreational purposes and are considered not suitable for heavy construction or industrial development. Overseas experience suggests that restored landfills could be developed into:

- Golf Course
- Football Pitch
- Recreational Facility
- Walking / Jogging Trail
- Park
- Lawn
- Cycle Track

1.3.5 Nevertheless, apart from the possible afteruses as indicated in section 1.3.4, the Government welcomes any innovative development proposals that would be compatible with the restoration facilities and the aftercare works at the restored landfills.

## **2. Application**

### **2.1 Eligibility – *Who may apply?***

- 2.1.1 Non-Profit-making Organisations (NPOs) or National Sports Associations (NSAs) are eligible to apply.
- 2.1.2 For the purpose of the Scheme, NPOs are defined as those organisations which have obtained charitable status under Section 88 of the Inland Revenue Ordinance (IRO) (Cap.112). Environmental Protection Department (EPD), acting as the Scheme Secretariat, obtain correspondence from the NPOs to ascertain their charitable status. The applicants (NPOs) shall provide the audited financial statements, or other related information, of their organisations for checking their charitable status upon the request of the Scheme Secretariat. If the applicants fail to accede to the Scheme Secretariat's request, their applications will not be processed further.
- 2.1.3 NSAs, whether they are registered under Section 88 of Cap. 112 or not, are eligible for applications. NSAs are recognised by the Sports Federation and Olympic Committee of Hong Kong, China (SF&OC) as the official representatives as well as the local governing bodies of their respective sports. For NSAs, the Scheme Secretariat would consult Home Affairs Bureau on their status and eligibility under the Scheme.
- 2.1.4 To accommodate interested organisations which are in the process of seeking the charitable status as described in section 2.1.2, NPOs which have formally submitted an application for charitable status to the Inland Revenue Department could also apply but they must have obtained the said charitable status before approval-in-principle was granted (which is generally about 4 – 6 months after the application deadline) if their proposed project was selected, otherwise their applications will not be processed further.
- 2.1.5 Joint applications involving two or more organisations are also welcome. All applicants must either be NPOs or NSAs. Nevertheless, there should be clear accountability arrangements and each application should

identify one principal applicant with the overall responsibility of ensuring compliance with the Scheme requirements and for liaison with the Scheme Secretariat.

- 2.1.6 Applications in personal capacity or from private company or commercial entity (not having the status of NPO or NSA) will not be accepted.

## **2.2 Application Procedures – *How to apply?***

- 2.2.1 Applications will be invited in batches. This is the first batch of applications and the following restored landfill sites are available for applications.

- (a) Ma Yau Tong Central Landfill;
- (b) Pillar Point Valley Landfill; and
- (c) Tseung Kwan O Stage I Landfill .

- 2.2.2 Applications for using the above sites shall be made on **a specified Application Form**. The Application Form could be obtained from the Scheme Secretariat, at the following address:

Secretariat of the Restored Landfill Revitalisation Funding Scheme  
Environmental Protection Department  
3/F., East Wing, 88 Victoria Road  
Kennedy Town, Hong Kong

or downloaded from the website of EPD on Restored Landfill Revitalisation Funding Scheme at [www.epd.gov.hk/epd/rlrfs](http://www.epd.gov.hk/epd/rlrfs)

- 2.2.3 To facilitate the applicants to complete the Application Form, this Guide to Application and Information Kits for the restored landfills under the first batch of applications have been prepared. The Information Kit contains the technical information about the restored landfill sites in particular the site boundary and area available for afteruse development as well as the technical requirements and development constraints of the

restored landfill sites. Both documents are useful for the preparation of the applications. Interested applicants should read them carefully before submitting the Application Form. The Information Kit could be obtained from the Scheme Secretariat, at the address as shown in section 2.2.2 or downloaded from EPD's website on Restored Landfill Revitalisation Funding Scheme at [www.epd.gov.hk/epd/rlrfs](http://www.epd.gov.hk/epd/rlrfs)

- 2.2.4 Restored landfill sites are not purposely designed for any above ground development. These sites comprise mainly slopes with only a few flat areas. To facilitate use of the restored landfill sites, in general, only the flat area(s) of a restored landfill site (as highlighted in the Information Kit of the restored landfill site concerned) is delineated for applications of afteruse development. It is noted that some prospective applicants may have proposals to use the slope area(s), in addition to the flat area(s), of the restored landfills. Such a request could be considered by the Steering Committee on a case-by-case basis taking into consideration the merits of the applications as a whole. Nevertheless, if any facility is proposed to be built on any slope area(s), the applicants shall be responsible for the maintenance of such slope(s) unless EPD agrees otherwise.
- 2.2.5 Any applicant wishing to apply for the use of two or more restored landfill sites should complete one Application Form for each restored landfill site.
- 2.2.6 **There will be two rounds of assessment.** The first round will be conducted based on the information provided in the Application Form. Applicants will be required to submit a conceptual plan comprising initial design of the proposed development and its proposed uses, as well as cost estimates on the technical front. Applicants short-listed in the first-round assessment will proceed to the second-round assessment. They will be invited to provide further information, and clarification if necessary. Details of the information required will be provided separately to the applicants selected for the second-round assessment.

## **2.3 Deadline for Submission of Application**

- 2.3.1 The deadline for applications is 12:00 noon 29 April 2016. All applications shall be made, by mail or in person, to the Scheme Secretariat at or before 12:00 noon 29 April 2016, at the following address:

Secretariat of the Restored Landfill Revitalisation Funding Scheme  
Environmental Protection Department  
3/F., East Wing, 88 Victoria Road  
Kennedy Town, Hong Kong

- 2.3.2 If a black rainstorm warning or typhoon signal No. 8 or above is hoisted between 9:00 a.m. and 12:00 noon on the closing date for receipt of the applications, the deadline shall be extended to 12:00 noon on the following working day (excluding Saturday). **Late submissions will not be considered.**

## **2.4 Methods of Submission of Application**

- 2.4.1 The following documents should reach the Scheme Secretariat by 12:00 noon, 29 April 2016.

- (a) the original plus one copy of the completed Application Form in hard copy;
- (b) a disk copy (soft copy **in pdf format**) of the completed Application Form under (a);
- (c) documentary proof of eligibility to apply and copies of relevant registration documents; and
- (d) supporting documents on the applications as requested under specific sections of the Application Form, if any.

- 2.4.2 If applicants fail to submit items in sections 2.4.1 (a) – (d) in accordance with the requirements, or fail to provide the essential information on the Application Form, e.g. estimated capital cost, business plan and financial

projections, etc., by the deadline, the Scheme Secretariat will reserve the right to disqualify the applications concerned. All submitted documents and materials will not be returned to the applicants.

- 2.4.3 Please note that no extension to the submission deadline of the Application Form would be granted, and no attachment, except the supporting documents mentioned in sections 2.4.1 (c) and (d), would be accepted. Application Forms with other unrequested additional attachments and/or those exceeding 88 pages (except for the section specified) will be considered as non-conforming applications, or the content of the exceeded pages and additional attachments may be disregarded in the assessment process at the discretion of the Steering Committee. Late applications and any revision to the details in the Application Forms after the deadline shall not be considered.

## **2.5 Notification of Results**

- 2.5.1 Applicants will be notified of the outcome of the first-round assessment after the Steering Committee has completed its deliberation.
- 2.5.2 Applicants who have passed the first-round assessment will normally be required to submit supplementary or further information for the second-round assessment or in case they have any revision or supplement to make. An appropriate period of time, about six weeks or as otherwise advised by the Scheme Secretariat, will be given to the shortlisted applicants to prepare the supplementary information and / or revised proposals. During this period, the applicants may be requested to attend an interview to present their proposal before the Steering Committee as part of the second-round assessment.
- 2.5.3 Applicants will be notified of the outcome of the second-round assessment after the receipt of all information required for the second-round assessment and after the completion of assessment by the Steering Committee. The selected applicants will be given an approval-in-principle so that they could take forward their selected proposals. Please refer to section 6 “Implementation of proposals after approval-in-principle was granted” for details on the necessary work to be undertaken to take forward the selected proposals.



2.5.4 The selected applicant, if not already a special purpose company (**SPC**), shall set up a SPC which possesses charitable status under Section 88 of IRO (Cap. 112) within nine months for the sole purpose of the project upon being selected. Please refer to section 5.1 on the setting up of the SPC.

2.5.5 The Government is not bound to accept any application submitted and reserves the right to announce the application results and to disclose the identity of the selected applicants without the consent of the selected applicants or any other applicants. An application shall not be deemed to have been accepted unless and until a Land Licence and / or a Funding Agreement are signed between the selected applicant and EPD.

## **2.6 Withdrawal**

2.6.1 Applicants may write to the Scheme Secretariat to withdraw their applications at any time before funding approval is sought from the Financial Services and the Treasury Bureau (FSTB) under delegated authority or the Finance Committee (FC) of Legislative Council (LegCo). **Withdrawal may affect the consideration of applications from the same applicant in future batches of the Scheme.**

## **2.7 Briefing Sessions and Open Days**

2.7.1 To facilitate interested parties to better understand the restored landfills under application as well as the operation of the Scheme, such as the application procedures, assessment criteria and scope of funding supports, briefing sessions will be arranged.

2.7.2 In addition, open days for the restored landfills under application will be arranged so that prospective applicants could visit and have a look of the restored landfills.

2.7.3 The exact dates (and venues) for the briefing sessions and open days are being arranged. Please visit EPD's website on Restored Landfill Revitalisation Funding Scheme at [www.epd.gov.hk/epd/rlrfs](http://www.epd.gov.hk/epd/rlrfs) for details nearer the time. Registration methods will be announced on the website.

## **2.8 Assistance to Applicants during the Application Process**

- 2.8.1 Applicants may contact the Scheme Secretariat for enquiries regarding the submission of applications:

Address: Secretariat of the Restored Landfill Revitalisation Funding Scheme  
Environmental Protection Department  
3/F, East Wing, 88 Victoria Road  
Kennedy Town, Hong Kong

Email: [rlrfs@epd.gov.hk](mailto:rlrfs@epd.gov.hk)

Phone: 2872 1658

Fax: 2591 6662

- 2.8.2 Information provided in response to enquiry may be shared with other applicants via a “Frequently Asked Questions” section at EPD’s website on Restored Landfill Revitalisation Funding Scheme at [www.epd.gov.hk/epd/rlrfs](http://www.epd.gov.hk/epd/rlrfs)

### **3. Screening and Assessment of Applications**

#### **3.1 The Steering Committee**

3.1.1 A Steering Committee, comprising Government and non-government representatives and experts in the fields of accounting, architecture, engineering, sports, social services as well as representatives of District Councils with restored landfills, has been set up to consider and assess applications received under the Scheme as well as to monitor progress of the supported applications and other related matters on the Scheme. Representatives of Bureaux / Departments concerned would also join the Committee as ex-officio members.

3.1.2 To avoid conflict of interest, members of the Steering Committee who are directly or indirectly related to any applicants or any applications will be required to declare interest and may be required to refrain from taking part in the discussion of the relevant applications.

#### **3.2 Screening and Assessment Criteria**

3.2.1 Unlike normal vacant land, there are certain development constraints inherent in restored landfills such as those outlined in section 1.3.3 as well as those highlighted in the Information Kit of the restored landfill concerned. Therefore, engineering and environmental feasibility of the proposed project is of paramount importance and relevant. Applications received will first be screened based on their engineering and environmental feasibility. **Only those applications which are found feasible in terms of being compatible with the landfill restoration and aftercare works as well as with the land use zoning and planning requirements of the sites concerned will be taken forward for further consideration.**

3.2.2 Applications which have passed the screening test will be taken forward for assessment on other aspects in accordance with the assessment criteria as highlighted in Table 1 below:

**Table 1: Screening and assessment of applications**

Areas of screening / assessment	Max. Mark
<b>(A) Screening criterion</b>	
Engineering and environmental feasibility of the project <ul style="list-style-type: none"><li>■ Project proposal should be compatible with the landfill restoration and aftercare works as well as with the land use zoning and planning requirements of the landfill site concerned</li></ul>	Only those applications passed the screening test will be taken forward for assessment with respect to the assessment criteria
<b>(B) Assessment criteria</b>	
(i) Technical aspects of the project This includes:- <ul style="list-style-type: none"><li>■ Conceptual plan and preliminary technical design of the project (including the measures and arrangements to address the restored landfill site development constraints)</li><li>■ Innovative design and use of the restored landfill site, and green architectural / landscape design, operation and management of the project</li></ul>	25%
(ii) Project's benefits and acceptance by the community This includes:- <ul style="list-style-type: none"><li>■ Project's benefits to the community at large, including degree of public enjoyment of the project, its social and recreational value, environmental benefits and other non-financial benefits of the project</li><li>■ Acceptance and support from the community</li></ul>	25%

<p>(iii) Financial viability and sustainability of the project</p> <p>This includes:-</p> <ul style="list-style-type: none"> <li>■ Financial aspects of the business plan, such as projected income and expenditure, proposed income-generating activities, starting costs, assumptions and basis of calculations on income and cost of sales, demand of proposed services / facilities, staff cost projections, cost control measures</li> <li>■ Reasonableness of the estimated capital costs, starting costs and operating expenses of the project and the amount of financial support required from the Government under the Scheme</li> </ul>	<p>25%</p>
<p>(iv) Management capability of the applicant</p> <p><i>(For joint applications, both the principal applicant and the cooperating organisation(s) will be assessed jointly for this aspect)</i></p> <p>This includes:-</p> <ul style="list-style-type: none"> <li>■ Management capability of applicant, including institutional set up, board of directors, adequacy of resources and manpower to deliver the project, level of commitment, history and objectives of organisation, backup from the parent organisations / headquarters (if any), core services provided, sources of income, cross sector collaboration etc.</li> <li>■ Track record and past experience, of the applicant and / or their key staff / project team, in planning, designing and developing / constructing similar project (including green design)</li> <li>■ Track record and past experience, of the applicant and / or their key staff / project team, in operating similar project (including green operation and management aspects)</li> </ul>	<p>25%</p>

- 3.2.3 There may be circumstances that no application could meet the assessment criteria to the satisfaction of the Steering Committee. In such case, the Government would arrange to re-invite applications for the restored landfill site concerned at a later stage.
- 3.2.4 The screening and assessment criteria are further elaborated at **Annex 1** for reference.

#### **4. Scope of Funding and Other Support to the selected applicants**

##### **4.1 Funding Support to the selected applicants**

4.1.1 The following funding support will be provided to selected applicant(s):–

- (a) capital grant, where necessary, to cover the costs, in part or in full, for the capital works and related matters as set out in sections 4.2.2 (a) to (e) of the approved projects;
- (b) if justified, a time-limited grant to meet the starting costs and operating deficits (if any) for a maximum of the first two years of operation of the approved projects; and
- (c) Nominal rental for the restored landfill sites.

##### **4.2 Grant for Capital Works**

4.2.1 Funding support, as capital grant, to cover the costs, in part or in full, for the capital works and related matters as set out in sections 4.2.2 (a) to (e) of the approved project will be provided to the selected applicant(s) where necessary. The level of the grant for capital works and related matters will be considered on a case-by-case basis depending on factors such as proposed scale and usage of the site, subject to **a cap of \$100 million** (in money-of-the day (MOD) prices) per project.

4.2.2 This capital grant should cover the costs, *inter alia*, of the following studies and works:

- (a) the consultancy services for pre-construction preparations such as:
  - detailed architectural, structural, geotechnical, building services, town planning, environmental, landscape and engineering design etc. in accordance with the selected proposal;

- site investigation and survey, etc. to obtain information for preparing the detailed design;
  - tendering of the work contract for main contractor and tender assessment, preparation of contract documents, contract administration, management of resident site staff and supervision of the construction works; quantity surveying services for valuations, cost control and account preparation;
  - submission to the Town Planning Board under the Town Planning Ordinance (Cap. 131), as and when required;
  - preparation of a Landfill Gas Hazard Assessment for the proposed project;
  - apply for an Environmental Permit, and carry out Environmental Impact Assessment as and when necessary, under the Environmental Impact Assessment Ordinance (Cap. 499), as and when required;
  - submission of specified plans to the Buildings Department and the Fire Services Department etc., as and when required.
- (b) the cost for construction and development of facilities, including site formation, foundation, building, building services, landscape, external, road works, fencing of the project site, etc. if required, on the landfill sites in accordance with the selected proposal;
- (c) remuneration of resident site staff;
- (d) furniture and equipment for the operation of selected proposal; and
- (e) contingency for works contract (e.g. 10% of the amount of the works contracts).

4.2.3 The selected applicant's project management personnel will not be funded by the Scheme.



- 4.2.4 Applicants are reminded to include all the costs spelled out in sections 4.2.2 (a) to (e) as the capital costs of the proposed projects. In addition, the capital grant is capped at \$100 million in MOD prices per project subject to the approval of the FC of LegCo or FSTB under delegated authority. It may take several years, depending on the complexity of the project, from the grant of approval-in-principle to the final implementation of the project after having obtained the necessary funding approval. It is the responsibility of the applicant to take note and factor in the necessary and appropriate price adjustment (such as changes in capital costs resulted from inflation, changes in construction materials price and construction workers wages etc.) in estimating the capital costs. Please refer to section 6 on “Implementation of proposals after approval-in-principle was granted” for details on the necessary work to be undertaken to take forward the selected proposals.
- 4.2.5 There may be situation that the cost for capital works of individual proposed project may exceed \$100 million. However, the capital grant from the Government will be capped at \$100 million in MOD prices and the applicant shall be responsible for the excess amount. The applicant may consider acquiring addition funding support, if necessary, from **external, non-government sources**.
- 4.2.6 **To avoid duplication of funding support for the capital works of any single project from the government sources, applicants seeking funding support on capital cost under this Scheme should not apply or accept funding support on capital cost from other government sources otherwise the applications will not be considered.**
- 4.2.7 The Steering Committee will examine whether the amount of grant applied for is acceptable. If the Steering Committee considers the amount not justified, it will recommend an appropriate level of grant.
- 4.3 Grant for Starting Costs and Operating Deficits**
- 4.3.1 If justified, a time-limited grant to meet the starting costs and operating deficits for a maximum of the first two years of operation (if any) of the approved projects will be provided to the selected applicant(s) where

necessary. The financial ceiling for such grant is set at **\$5 million** (in MOD prices) per project. Costs incurred during the pre-operating period by the SPC are regarded as starting costs, which includes items not covered in the capital works (i.e. items not covered in section 4.2.2) and are necessary for the operation of the approved projects such as website and publicity works, consumables, remuneration of essential staff before commencement of operation of the projects etc.

- 4.3.2 Selected applicant(s) may apply to the Government for a grant to meet, in part or in full, their starting costs and / or deficits in the first two years of operation. In doing so, they should demonstrate that their project(s) are projected to become self-sustainable after the first two years of operation and provide detailed justifications, including their annual budgets for initial years of operation of the their project(s) (at least the initial three years). After obtaining the necessary funding approval, the grant for starting costs will be provided during the pre-operating period, and grant for operating deficits will be provided upon receipt of the audited financial statements / management accounts / financial plan of the relevant period. Please be reminded that, similar to the grant of capital works as spelled out in section 4.2.4, it is the responsibility of the applicant to take note and factor in the necessary and appropriate price adjustment in costs during the period of time from the grant of approval-in-principle to the final implementation and operation of the project in their estimation of the amount of grant needed.
- 4.3.3 The Steering Committee will examine whether the amount of grant applied for is acceptable. If the Steering Committee considers the amount not justified, it will recommend an appropriate level of grant.
- 4.3.4 The grant for starting costs will be based on items and costs approved by the Steering Committee and ENB / EPD. The amount of grant for meeting operating deficits will be limited to the approved ceiling, or the cumulative operating deficits (excluding non-cash expenditure items such as depreciation) as reflected in the audited financial statements / management accounts / financial plan, whichever is lesser.

#### **4.4 Nominal Rental for the Restored Landfill**

- 4.4.1 The Government will charge nominal rental for the restored landfill site through a Land Licence. In accordance with the Land (Miscellaneous Provisions) Regulations (Cap. 28A), the rental for restored landfills at urban area and New Territories is \$10 and \$1 per annum respectively.
- 4.4.2 The Government (as the licensor) will enter into legally binding tenancy agreement, in the form of a Land Licence, with the selected applicant (as the licensee) before any construction works can be carried out at the restored landfill site.
- 4.4.3 **No subletting of the landfill site, in part or in whole, will be allowed unless with the prior approval of the Steering Committee, ENB or EPD.**
- 4.4.4 Despite the Government will only charge nominal rental for the restored landfill site, selected applicants are however still required to pay the **rates and Government rent** for the properties and facilities developed on the restored landfill sites. The actual amount of rates and Government rent to be paid will depend on the size and usage of the site, size and nature of the properties and facilities developed on the site, location of the site, etc. The rateable value, and hence the amount of rates and Government rent, will be subject to annual revaluation by the Rating and Valuation Department. It is the responsibility of the applicants to consider if they wish to include the expenses for the rates and Government rent as one of the operating expenses of the project.

#### **4.5 Use of the Funding Support**

- 4.5.1 Any surplus of grants for the capital works, starting costs and operating deficits should be returned to the Government together with interest earned, if any.
- 4.5.2 **Approved project should be of non-profit-making in nature.** Selected applicant will be required to set up a dedicated account for each individual project. Any revenue, including interest, earned from the

project has to be ploughed back to the dedicated account for operation of the project and any surplus, if available, upon completion of the project on expiry of the Land Licence and / or Funding Agreement, should be returned to the Government, unless otherwise as agreed with ENB / EPD in advance.

4.5.3 The selected applicants should be self-financing and should not rely on Government subvention as its major source of income. In addition, the selected applicants should not rely primarily or heavily on donations and other forms of subsidy as the business should in principle be viable and sustainable on its own. Please see section 4.6 on “Donation and Sponsorship”.

4.5.4 **The selected applicants should not commit any expenditure (unless such expenditure is not to be met by the government grants) under the Scheme until the necessary funding approvals have been obtained as well as written approval has been obtained from ENB / EPD, or such expenditure will not be eligible for funding from the Scheme.**

#### **4.6 Donation and Sponsorship**

4.6.1 Donation (including donation-in-kind) and sponsorship can be received by the selected applicants for the purpose of implementing the approved project, as a subsidy for the capital costs or operating expenses. **Prior approval from the Steering Committee / ENB / EPD should be sought before acceptance of the donation and sponsorship with value exceeded \$20,000 each.**

4.6.2 Nevertheless, projects supported under the Scheme should be able to operate in a self-financing basis and should not rely on Government’s time-limited grant, donations or other forms of subsidy as its major source of income. However, under special circumstances, e.g. during extremely difficult period, donations can be regarded as a fallback source of income.

4.6.3 The Steering Committee / ENB / EPD will consider the proposed donations and sponsorships on a case-by-case basis. Again a common

sense approach and a proportionality test would be adopted. Applicants shall seek prior approval before receiving any donations, sponsorships or other forms of subsidy on the approved project with value exceeded \$20,000 each. As a general rule, donation and sponsorship from companies selling tobacco and hard liquor or involving in immoral, offensive activities, or from those individuals or companies who are the contractors or service providers of the approved project should be declined. It is the responsibility of the selected applicants to ensure that its management and staff avoid possible conflict of interest and conform to the requirements of the Prevention of Bribery Ordinance (Cap. 201).

- 4.6.4 All donations and sponsorships must be acknowledged in writing, with a copy retained for audit purposes. Donations and sponsorships in monetary terms shall be credited to the dedicated account of the approved project and should be indicated in the Statement of Profit or Loss and Other Comprehensive Income the amount of sponsorship and donation received. **Donation should in general be used first before tapping into the grants from the Scheme.** Unspent or unused donations / sponsorships should be returned to the donors / sponsors, or disposal of in compliance with the terms of the donations or sponsorships, or as agreed with the Steering Committee / ENB / EPD.
- 4.6.5 The names of the donors / sponsors, the type, amount and ultimate usage of donations (including donation-in-kind) / sponsorship received, as well as copies of the acknowledgement letters to donors / sponsors in relation to the project should be kept for seven years for inspection by ENB / EPD as and when necessary.

#### **4.7 Other Support to selected applicants**

- 4.7.1 Selected applicants may encounter difficulties in the process of project implementation. The Scheme Secretariat will provide a one-stop service to assist the applicants to take forward their proposal and, where necessary, refer their enquiries in specific areas to the appropriate departments.
- 4.7.2 The Scheme Secretariat will also assist selected applicants to consult the relevant District Council and stakeholders on their proposals and in

liaising with the departments concerned as appropriate.

- 4.7.3 However, the responsibility to make necessary statutory (or licensing if any) submissions still rests with the applicants. The selected applicants will assume the role of works agent and ultimately be responsible for the timely delivery of the approved projects from inception to completion of construction within budget and the operation of the projects as originally proposed.

## **5. Administrative and Financial Arrangement with the selected applicants**

### **5.1 Setting up of a Special Purpose Company**

5.1.1 To facilitate the monitoring of the income and expenditure of the approved project, the selected applicant shall set up a special purpose company (SPC) in Hong Kong, **with a dedicated account**, within **nine months** upon being selected (i.e. upon the grant of the approval-in-principle) for the sole purpose of operating the selected project. The SPC shall possess the charitable status under Section 88 of the IRO (Cap. 112). The SPC should, mutatis mutandis, submit a proposal in its own name together with documentary proofs of the setting up and the tax exemption status of the SPC within one month upon request by the Government in writing. **Expenses for the setting up of the SPC will be borne by the selected applicants.**

5.1.2 The selected applicant is required to complete the setting up of a SPC, as required under section 5.1.1, before obtaining any funding support under the Scheme.

5.1.3 The selected applicants / SPCs should undertake adequate measures to facilitate financial monitoring by the Government during the land licensing and / or funding agreement period, in particular to facilitate detection of any attempt to siphon off funds intended for or arising from the project to serve unrelated purposes.

### **5.2 Contractual Requirements**

5.2.1 The SPCs will be required to enter into agreements with the EPD, through:-

- (a) a **Land Licence** to occupy the restored landfill site for the development and operation of the approved project; and
- (b) a **Funding Agreement** if funding support from the Scheme is necessary.

- 5.2.2 Suitable terms and conditions, such as provisions on permissible usage, reinstatement of site if necessary (depending on the kind of usage of the site), and compatibility with the landfill restoration works, etc. will be set down in the Land Licence. On the other hand, terms and conditions on the amount of funding support granted, financial and operation obligations as well as fund disbursement arrangement, etc. will be set down in the Funding Agreement, if funding support from the Scheme is necessary. The SPCs shall comply with all the terms and conditions laid down in the Land Licences and / or Funding Agreements, and all instructions and correspondence issued by the ENB / EPD from time to time in respect of the approved project, or any other matter related thereto.
- 5.2.3 The duration of Land Licence and / or Funding Agreement is expected to vary from **3 to 15 years** as proposed by the applicant and advised by the Steering Committee having regard to the nature of the proposed development. ENB / EPD will review the performance of the approved projects and other factors prevailing at the time to decide whether the Land Licence and / or Funding Agreement will be renewed, subject to the advice from the Steering Committee. ENB / EPD reserves the right not to renew the Land Licence and / or Funding Agreement upon their expiry.
- 5.2.4 Any modification, amendment or addition to the approved project, including the change of the project period, project scope, mode of operation, or major budget components, requires the prior written approval of ENB / EPD, or may be considered as a breach of terms of the Land Licence and / or Funding Agreement.

### **5.3 Payment Arrangements**

#### *Payment for capital works*

- 5.3.1 Payments in relation to the capital grant, where necessary, to cover the costs, in part or in full, for the capital works and related matters of the approved projects will be made on a reimbursement basis. The SPCs should satisfy itself that the service / works claimed has been undertaken



in accordance with the terms and conditions of relevant agreement / contract and should settle the payment required in the first instance. The SPCs shall hold legal responsibility for any claims filed by consultants / contractors / service providers etc. if they fail to meet the obligations on timely payment of bills.

- 5.3.2 All claims for payment should be sent to the Scheme Secretariat for settlement and be supported by (i) invoices or bills and (ii) original receipts of the relevant payments certified correct by the authorised representatives of SPCs and their consultants where necessary. After checking the correctness of the documents, the Scheme Secretariat will make payment to the SPCs accordingly.

*Payment for starting costs and operating deficits*

- 5.3.3 For the grant to help the SPCs to meet the starting costs, unless with prior approval from the Steering Committee and ENB / EPD on other payment arrangement, payments will be made on reimbursement basis. Claims should be made to the Scheme Secretariat for settlement and supported by (i) invoices or bills and (ii) original receipts of the relevant payments certified correct by the authorised representatives of the SPCs. After checking the correctness of the documents, the Scheme Secretariat will make payment to the SPCs accordingly. Any expenditure which is not included in the approved estimate of starting costs is considered to be ineligible.

- 5.3.4 For the grant to help the SPCs to meet the operating deficits arising in the initial two years of operation, payment will be made on a reimbursement basis according to the audited financial statements for the project for the first and second year of operation.

*Other points to note*

- 5.3.5 However, if any SPC is unable to settle the bill due to cashflow problem, it may apply for advance payment from the Scheme Secretariat with justifications and supporting evidence such as bank statements, management accounts and / or financial plan as deemed necessary by the Scheme Secretariat. On basis of the justifications and supporting

evidence submitted, the Scheme Secretariat will give approval for advance payments to the SPC. If the Scheme Secretariat makes advance payment for a bill, the SPC should settle the bill as soon as possible and submit the original receipt from its contractors / suppliers / consultants duly certified correct to the Scheme Secretariat not later than one month after the receipt of advance payment.

- 5.3.6 All expenditure could only be reimbursed within 6 months, or otherwise as agreed with ENB / EPD in advance, after spending. Late applications for reimbursement will not be processed.

#### **5.4 Books of Accounts and Records**

- 5.4.1 The SPCs should maintain separate proper books of accounts and records for the project. The books of accounts and records of the project will need to be kept for inspection and may only be destroyed seven years after the end of the financial year in which the entry occurred.

#### **5.5 Project Bank Account and Interest**

- 5.5.1 The SPCs should keep a separate interest-bearing Hong Kong Dollar account with a bank licensed in Hong Kong solely and exclusively for processing all receipts and payments of the approved project. Payments from that account should be made by the authorised representative(s) of the SPCs. The SPCs will be required to provide documentary proof of such authorisation.
- 5.5.2 All interest income generated from the project bank account set out in section 5.5.1 above should be ploughed back into the project. Under no circumstances should the interest earned be applied for other uses outside the project, and no negative interest should be charged to the project.

#### **5.6 Title to Furniture and Equipment**

- 5.6.1 A register of furniture and equipment should be maintained to account for all fixed assets with individual cost of HK\$1,000 or above purchased during the initial two years of operation of the approved project. A

separate list should be kept for such fixed assets purchased using funding of the Scheme.

- 5.6.2 The SPCs will hold the title to furniture / equipment / items procured for the operation of the project using their own funds. However, if they have applied for grant to purchase any furniture / equipment / fixed asset for the approved project and have succeeded in their applications, then throughout the initial two years and for three years afterwards, prior written approval from ENB / EPD is required for the transfer, sale or disposal of the equipment / fixed asset. Sales or other proceeds, if any, should be reinvested into the project. The SPCs should conduct physical spot check on the furniture and equipment at least once a year and submit the inventory records to ENB / EPD as and when required.

## **5.7 Project Income and Residual Funds**

- 5.7.1 All income generated from the project, including the revenue earned from the usage of the services / facilities or other related commercial activity, irrespective of whether it has been declared in the proposal, should stay with the project and be accounted for with a view to being ploughed back to support the continuation of the project.
- 5.7.2 Any surplus arising from the project's operation should be re-invested back into the project. Upon completion of the project or on expiry of the Land Licence and / or Funding Agreement, any surplus, if available, should be returned to the Government, unless otherwise as agreed with ENB / EPD in advance.
- 5.7.3 The Government and the Steering Committee accept no liabilities for any deficits arising from the project.
- 5.7.4 If for any reason the project ceases operation while the Land Licence and / or Funding Agreement are still in force, the ENB / EPD reserves the right for prior claim to any sales or other proceeds arising from its cessation, with the exact amount to be determined up to the maximum level of the total grant paid by the Government during the first two years' operation of the approved project.

- 5.7.5 If for any reasons the project is suspended by the selected applicant / SPC during the course of development or at any stages before termination of Land Licence and / or Funding Agreement, the ENB / EPD reserves the right to require the selected applicant / SPC to reinstate the site to its original state at his own expense.
- 5.7.6 Upon dissolution of the selected applicant / SPC, any surplus funding and assets of the project should be returned to the Government or disposed of under any other arrangement as agreed in advance by the ENB / EPD in writing.

## **5.8 Use of Information and Data**

- 5.8.1 The Government has the right to make use of / disclose information in regard to the applications (as well as related information) as necessary for the purposes of assessing proposal, conducting research, sharing with other parties concerned, etc.
- 5.8.2 The selected applicants / SPCs are reminded to ensure that they have the ownership of the intellectual property rights relating to their respective projects, and that the intellectual property rights shall at any time be granted to the Government.

## **5.9 Procurement and Staff Employment**

- 5.9.1 The SPCs should exercise utmost prudence and care in procuring consultancies, contracts, equipment, goods or services in relation to their projects. They should ensure that all procurements of any value in relation to the project are made on an open, fair, value for money and competitive basis and only from those consultants / contractors / services providers / suppliers who are not their associates, associated persons, or related companies unless ENB / EPD has otherwise approved in writing, in order to ensure openness, fairness and value for money. The SPCs should adhere to the following procedures unless prior agreement has been obtained from ENB / EPD:

- (a) for every procurement the aggregate value of which is HK\$50,000 or below, quotations from at least two suppliers should be obtained;

- (b) for every procurement the aggregate value of which is more than HK\$50,000 but not exceeding HK\$1,430,000, quotation from at least five suppliers should be obtained;
- (c) for every procurement the aggregate value of which is HK\$1,430,000 or more, open tendering should be adopted; and
- (d) the selected applicants / SPCs should select the supplier that has submitted the lowest conforming bid. If the lowest bid is not selected, full justifications must be given and properly recorded for subsequent auditing purpose.

5.9.2 The SPCs should allow the Government, Director of Audit or its representatives to have unhindered access to and to enquire, examine and audit (including making copy of) the records and accounts in relation to the project and explain to the Government, Director of Audit or its representatives any matters relating to the receipt, expenditure or custody of any monies derived from the grant. All quotations and tendering documents in relation to the project should be kept for inspection by the Government, Director of Audit or its representatives for at least seven years after completion of the project or termination of the Land Licence(s) and / or Funding Agreement.

5.9.3 Works, services or goods provided by related parties of the SPCs which are not charged on an actual reimbursement basis should be set out in a service agreement to be submitted to ENB / EPD for prior consent before service commencement.

5.9.4 For staff to be employed for the project, the principles of openness, fairness and competitiveness should be strictly observed during the recruitment process. The level of pay should be on par with the general market level and the employment terms should comply with the Employment Ordinance (Cap. 57) and any other relevant ordinances. The statutory minimum wage requirement as stipulated in the Minimum Wage Ordinance (Cap. 608) must be observed.

- 5.9.5 Including but not limited to procurement and recruitment, the SPCs are required to put in place proper guideline and procedures for declaration of interest. The SPCs should remind and require their management board and staff involved in the procurement and recruitment processes to avoid any actual or perceived conflict of interest. If this is unavoidable, the management board or staff concerned should make the relevant declaration for a management decision as to whether they should abstain from the procurement and recruitment exercise. All cases of declaration of interest shall be properly documented.
- 5.9.6 If considered necessary by ENB / EPD, the Independent Commission Against Corruption (ICAC) may be requested to examine the management and control procedures of the approved projects with a view to providing corruption prevention advice to ensure the proper use of funds and resources. In such case, the SPCs should render necessary assistance to the ICAC. A code of conduct should also be drawn up by the SPCs.
- 5.9.7 It is the responsibility of the SPCs to ensure that their management and staff comply with the requirements of the Prevention of Bribery Ordinance (Cap. 201).
- 5.9.8 Arrangements as set down in sections 5.9.1 to 5.9.7 are not applicable to the engagement of consultants and contractors to undertake the capital works of the approved projects, which is separately outlined in sections 6.3 to 6.6.

## **5.10 Insurance**

- 5.10.1 The SPCs should procure appropriate insurance policies and indemnify the Government against any claim that may arise during surveys, investigations, construction and operation of the approved projects throughout the licensing and funding agreement period in accordance with the terms and conditions of the Land Licence and / or Funding Agreement.

## **5.11 Financial Guarantees, Undertakings and Indemnities**

5.11.1 The Government may require, *inter alia*, undertakings from the selected applicants / SPCs and / or other interested parties (including without limitation where the selected applicant / SPC is a joint venture company, the shareholders, its respective holding companies, and its guarantors as described below). The Government expects such undertakings to take the form of non-assignable guarantees, undertakings and indemnities to be given directly to Government, on a joint and several basis. Such guarantees, undertakings and indemnities may include, *inter alia* –

- (a) guarantee / undertaking whereby the selected applicants / SPCs and / or other interested parties and / or financial institutions guarantee / undertake that the site will be furnished, operated, managed, maintained throughout the licensing and funding agreement period in accordance with the Land Licence and / or Funding Agreement;
- (b) an indemnity from the selected applicants / SPCs and / or other interested parties and / or financial institutions to indemnify the Government against any costs, expenses, damages and liabilities incurred by the Government arising out of or in connection with (i) any re-issue of invitation for proposals, re-tender, assignment or transfer of the project to any third party upon revocation or termination of the Land Licence and / or Funding Agreement due to the default of the selected applicant / SPCs and / or its guarantor and (ii) the performance or breach of the Land Licence and / or Funding Agreement; and
- (c) an unconditional and irrevocable financial undertaking from a guarantor for a maximum aggregate sum of the funding to be obtained from the Scheme.

5.11.2 Applicants are required to provide details of such guarantees, undertakings and indemnities in their project proposals if selected. Any guarantees, undertakings and indemnities offered in the project proposals must be maintained in force until the selected applicants have duly performed all their obligations under the Land Licence and / or Funding Agreement. The Government reserves the right to decide whether the

guarantor (which has to be financially capable) is acceptable and to disqualify any application concerned which fails to meet the Government's requirements.



## 6. Implementation of proposals after approval-in-principle was granted

6.1 Selected applicants will be given an approval-in-principle so that they could take forward their approved proposals. In addition to the setting up of a SPC as required in section 5.1, the selected applicants / SPCs have to carry out the following key tasks / assignments for project funding application, detailed project design and planning. A flow chart summarizing the key tasks / assignments to be done by the applicant after the grant of approval-in-principle is shown at Annex 2. These key tasks / assignments are also outlined below for reference. The Scheme Secretariat / EPD will render necessary assistance to the selected applicants / SPCs in carrying out these tasks / assignments.

*With the applicant's own resources:*

- (a) Submit a detailed master programme for the delivery of the proposed projects with all milestone dates identified (the master programme should be revised and updated from time to time as the project implements);
- (b) Prepare all necessary presentation materials, including visual images and documents, for consultation with the relevant District Councils;
- (c) Prepare a Technical Feasibility Statement<sup>3</sup> (TFS) for the capital works of the proposed projects to be included in Government's Capital Works Programme if Government's funding support is required;
- (d) Prepare the applications for funding for carrying out the capital works of the proposed projects (i.e. capital works as listed in

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<sup>3</sup> ENB / EPD will prepare a **Project Definition Statement (PDS)** for the capital works of the selected project to justify and define the scope of the project. The selected applicant / SPC, as a **works agent** of the project, has to confirm the feasibility of the proposed projects, on a prima facie basis, with the submission of a TFS.

sections 4.2.2 (a) to (e)), **if funding support from the Government is required.**

The carrying out of the capital works of the proposed projects should comply with the prevailing Capital Works Reserve Fund (CWRP) requirements, including the preparation of PDS (to be undertaken by ENB / EPD) and TFS (to be undertaken by the selected applicants / SPCs), and the approval of TFS (by Development Bureau). The selected applicants / SPCs will assume the role of **work agents** in undertaking the proposed projects.

The selected applicants / SPCs may engage professional consultants **at its own expense** to undertake necessary works or feasibility studies to facilitate their making of the TFS and submissions for funding support.

While the applications for funding will be put forward by ENB / EPD for approval, the selected applicant / SPC is expected to provide all necessary information to support the funding request and to attend the LegCo meetings and the relevant Panel meetings if required.

*Upon obtaining necessary funding approvals:*

The selected applicants / SPCs shall engage professionals, consultants or contractors as appropriate to undertake the following tasks / assignments:-

- (e) Carry out site investigation and survey, etc. to obtain information for preparing the detailed design;
- (f) Depending on the type and scale of the proposed project, make submission to the Town Planning Board under the Town Planning Ordinance (Cap. 131) for the proposed usages, as and when required;
- (g) Carry out a Landfill Gas Hazard Assessment for the proposed project;

- (h) Depending on the type and scale of the proposed project, apply for an Environmental Permit, and carry out Environmental Impact Assessment as and when necessary, under the Environmental Impact Assessment Ordinance (Cap. 499) for the proposed usages, as and when required;
- (i) Depending on the type and scale of the proposed project, make submission of specified plans to the Buildings Department and the Fire Services Department etc., as and when required;
- (j) Carry out detailed architectural, structural, geotechnical, building services, town planning, environmental, landscape and engineering design etc. including technical submissions, cost estimates of the construction and operation phases of the project with detailed breakdown, implementation timetables with milestones for key performance targets identified, tender documentation etc., in accordance with the selected proposal; and
- (k) Liaison with other parties for regulatory requirements, interfacing issues and dispute resolution as and when necessary.

6.2 Depending on the nature, scale and capital costs of the proposed project, applications for funding support may have to be made in two stages. For more complex and / or larger scale project, selected applicants / SPCs may first apply for funding support to carry out pre-construction preparations, including those studies and works listed out in sections 6.1 (e) to (j), so as to obtain further information for the detailed design of the proposed project. Upon completion of the necessary pre-construction preparation and the detailed design of the proposed project, selected applicants / SPCs should apply for funding support for the (remaining) capital works of the project. Please refer to the flow chart at **Annex 2** on Implementation of proposal after approval-in-principle.

6.3 For the employment of professional consultants to manage the capital works of the approved projects, the selected applicants / SPCs should select and invite those from the Lists of Consultants maintained by Architectural and Associated Consultants Selection Board (AACSB); or

the Services Directory of the Engineering and Associated Consultants Selection Board (EACSB) or other suitable sources, as appropriate.

- 6.4 For the Contractors to carry out the capital works of the approved projects, the selected applicants / SPCs should also select those from the Lists of Approved Contractors maintained by the Development Bureau (DEVB) or relevant government departments, or other suitable sources, as appropriate.
- 6.5 All quotations and tendering documents in relation to the project should be kept for inspection by the Government, Director of Audit or its representatives for at least seven years after completion of the project or termination of the Land Licence(s) and / or Funding Agreement.
- 6.6 Upon obtaining necessary funding approvals, a formal written approval on the proposed projects will be granted by ENB / EPD to the SPCs.
- 6.7 **The selected applicants / SPCs should not commit any expenditure (unless such expenditure is not to be met by the government grants) under the Scheme until the necessary funding approvals have been obtained as well as written approval has been obtained from the ENB / EPD, or those expenditure would not be eligible for funding from the Scheme.**
- 6.8 The SPCs will then be required to enter into agreements with EPD, through a Land Licence and / or a Funding Agreement. Upon the signing of the Land Licence and / or the Funding Agreement, the SPCs should implement the approved project in accordance with the terms and conditions of the signed agreements, including:
- (a) procurement of construction works through tendering (with the assistance of professional consultants);
  - (b) construction of the facilities in accordance with approved plans;
  - (c) procurement of necessary equipment, furniture, or other goods and employment of necessary staff; and

- (d) commencement of operation of the facilities / services of the approved project.
- 6.9 If the funding application is not approved by LegCo, ENB / EPD reserves the right to withdraw the approval-in-principle. Similarly, if the selected applicant / SPC fails to obtain the necessary permission / approval from the respective authority within a specified period or there is prolonged delay in the implementation of the project in accordance with detailed master programme, ENB / EPD reserves the right to withdraw the approval-in-principle and invite applications for the restored landfill site concerned afresh at a future date. No compensation will be payable to the selected applicant / SPC under either situation.
- 6.10 **An application shall not be deemed to have been accepted unless and until a Land Licence and / or a Funding Agreement are signed between the SPC and EPD.**
- 6.11 The SPCs should endeavor to keep to the original project scope and project estimate as outlined in the submission to FC or FSTB for funding approval. Any variations or fine-tuning of project proposals during project implementation must be within the approved scope and project estimate. The projects should be carefully planned to avoid need of major changes in scope and / or approved project estimate (APE). Any major change in scope and / or APE must be endorsed again by the Steering Committee, ENB / EPD, FSTB, PWSC and / or FC.

## **7. Monitoring of the implementation of approved projects**

### **7.1 Detailed Master Programme**

7.1.1 Upon the granting of approval-in-principle by ENB / EPD, the selected applicants / SPCs are required to submit a detailed master programme for the delivery of the approved projects with all milestone dates identified (with reference to the date of formal funding approval from the FC of the LegCo and / or other pledged sources as appropriate) to the Scheme Secretariat for reference, and thereafter progress reports on a regular basis to the Scheme Secretariat for monitoring (please see section 7.2 on submission of progress report).

7.1.2 The Scheme Secretariat may appoint other Government departments or organisations to assist them in carrying out the monitoring works. The selected applicants / SPCs should provide whatever information as deemed necessary by the relevant Government departments or organisations and allow them to carry out site inspection works as necessary to facilitate the effective discharge of their duties. In carrying out their monitoring works, the relevant Government departments or organisations may need to enter into direct dialogue with the selected applicants / SPCs.

### **7.2 Regular Progress Reports and Final Evaluation Report**

7.2.1 The selected applicants / SPCs will be required to submit the following reports (under a standard format to be advised separately) on the project covering the period from the granting of approval-in-principle to the expiry of the Land Licence and / or Funding Agreement –

(a) quarterly progress reports

- reporting the progress of implementation of the selected projects;

- slippage to the detailed master programme, if any, together with the mitigation measures should be highlighted in the progress reports;
- should also include up-to-date actual and projected cash flow, variation orders and claims, if any, from the consultants and contractors of the project etc.
- to be submitted within one month following the end of the three-month period

(b) annual reports

- reporting the progress of implementation of the selected projects;
- should include an updated business plan and the financial plan of the approved project (see also section 7.3);
- should also contain the audited financial statements and Auditor's Reports for the selected projects (see also section 7.4);
- to be submitted within three months following the end of the accounting period

(c) final evaluation report

- evaluating the implementation, achievement and effectiveness of the selected projects;
- should contain the audited financial statements and Auditor's Reports for the selected projects (see also section 7.4);
- to be submitted within six months following the expiry of the Land Licence and / or Funding Agreement or termination of the project, whichever is the earlier

- 7.2.2 The SPCs applying for the time limited grant for meeting operating deficits without support of audited financial statements will be required to submit management accounts (including Statement of Financial Position and Statement of Profit or Loss and Other Comprehensive Income) and / or financial plan certified correct by the authorised representatives of the SPCs as deemed necessary. The management accounts should substantiate amounts granted for the starting costs and operating deficits.
- 7.2.3 The above reports will be submitted to the Steering Committee for consideration.

### **7.3 Business and Financial Plans**

- 7.3.1 All approved projects supported under the Scheme should be self-sustainable (after the initial period of a maximum of the first two years of operation). To enable ENB / EPD to review and assess the operation of the approved project regularly, the selected applicants / SPCs should submit to ENB / EPD, at his own cost and expense, a three-year business plan and a three-year financial plan for the agreement of ENB / EPD **at least six months before the commencement of operation of the approved project**. Moreover, the selected applicants / SPCs should update and submit the business plan and the financial plan to ENB / EPD within three months following the end of the accounting year.
- 7.3.2 All approved projects should be of non-profit-making in nature. Nevertheless, to help maintain the financial viability and sustainability of the proposed projects, a certain extent of income-generating services / activities would be allowed in their business plan, without compromising the intended uses of the restored landfill sites. However, the pursuit of maximum profit should not be the primary objective of the projects.
- 7.3.3 All income-generating services / activities should be clearly spelled out in the business plan for agreement with ENB / EPD. Should there be any changes to the nature and extent of these income-generating services / activities, prior agreement with ENB / EPD should be made.



- 7.3.4 The business plan and financial plan will be submitted to the Steering Committee for consideration, as and when necessary.

#### **7.4 Audited Financial Statements**

- 7.4.1 SPCs are required to submit annual audited financial statements (along with the submission of the annual reports). The audited financial statements must contain the Auditors' Report (including an assurance that the funding was spent in accordance with the conditions of grant), Statement of Financial Position, Statement of Profit or Loss and Other Comprehensive Income, Cashflow Statement and Notes to Financial Statements. All such financial information must be audited and certified by an independent auditor who is a Certified Public Accountant (Practising) registered under the Professional Accountants Ordinance (Cap. 50).
- 7.4.2 Audited financial statements should be submitted within three months following the end of the accounting period, and the final audited financial statements of the whole project should be submitted within six months following the expiry of the Land Licence and / or Funding Agreement or termination of the project, whichever is the earlier.
- 7.4.3 The selected applicants / SPCs should identify their own auditors. Should the auditing of the project incur extra cost (in terms of auditors' remuneration), the extra cost may be claimed from the Scheme as part of the grant to meet the operating deficits of the approved project for the first two years of operation.

#### **7.5 On-site Visits, Inspections and Progress Review Meetings**

- 7.5.1 For the purpose of monitoring the progress of project implementation as well as ensuring the development and operation of the approved projects are in compliance with the terms and conditions of the Land Licence and / or Funding Agreement, members of the Steering Committee, staff of the Scheme Secretariat and EPD, or Government officials from the relevant bureaux, departments or organisations authorised by the Government would conduct visits and inspections to the restored landfill site concerned and / or facilities of the approved project from time to time.

The selected applicants / SPCs will be required to assist in arranging such visits and inspections as necessary during both the construction and operational phases of the project implementation.

- 7.5.2 Progress review meetings with the selected applicants / SPCs will be arranged to review and examine the progress of the project implementation and level of achievement of the projects on a need basis.

## **7.6 Commencement of Operation of Approved Projects**

- 7.6.1 Selected applicants / SPCs should monitor and strive to complete the capital works of the approved project on time and within budget as stated in the approved funding paper. The approved project should commence active operation / service within three months after the completion of the construction / building works of the project, unless otherwise approved by ENB / EPD.
- 7.6.2 In any event that the selected applicant / SPC, without any reasonable justification(s), fails to commence active operation / service within the above said period, ENB / EPD shall reserve the right to refuse, suspend or withdraw the grant of funds to the selected applicant / SPC, or to reduce the amount of funds as ENB / EPD considers appropriate. In such circumstance, no compensation will be payable to the selected applicant / SPC.
- 7.6.3 In the event that the approved project is not operated to the satisfaction of ENB / EPD in accordance with the finalised proposal endorsed by ENB / EPD, ENB / EPD, as advised by the Steering Committee, will request the selected applicant / SPC to rectify the situation. In the event that the selected applicant / SPC fails to accede to ENB / EPD's request within a specified period, ENB / EPD, as advised by the Steering Committee, will decide whether to terminate the Land Licence and / or Funding Agreement and retake possession of the restored landfill site. Under such circumstances, no compensation will be payable to the selected applicant / SPC, and the selected applicant / SPC shall be held responsible and shall at its own expense to reinstate the restored landfill site and make good any damage done to the restored landfill site. If the applicant / SPC fail to carry out any such necessary works to the

satisfaction, ENB / EPD may carry out such works and the applicant / SPC shall pay to the Government on demand the cost of such works.

## **7.7 Premature Termination of Projects**

- 7.7.1 Prior written approval from ENB / EPD is required for premature termination of the project by the selected applicant / SPC for any reason before the expiry of the Land Licence and / or Funding Agreement. The selected applicant / SPC will need to attend District Councils and LegCo sessions to explain about the premature termination

**Secretariat of the Restored Landfill Revitalisation Funding Scheme  
November 2015**

Screening and Assessment of Applications

- A1.1 Applications received under the Restored Landfill Revitalisation Funding Scheme will first be screened based on their engineering and environmental feasibility. Only those applications which are found feasible in terms of being compatible with the landfill restoration and aftercare works as well as with the land use zoning and planning requirements of the sites concerned will be taken forward for further consideration.
- A1.2 Applications which have passed the screening test will be taken forward for assessment on other aspects in accordance with the assessment criteria as highlighted in Table 1 of Section 3.2.
- A1.3 These criteria are elaborated in the below paragraphs for applicants' reference.

**A2. Engineering and environmental feasibility of the project**

- A2.1 Applications received will first be screened based on their engineering and environmental feasibility. Applicants are required to fill in the following information and details in the Application Form to show and demonstrate their proposals are engineering and environmentally feasible.
- (a) Measures and arrangement to address the development constraints of the restored landfill site and to ensure the proposed project is compatible with the landfill restoration and aftercare works; and
  - (b) Compatibility with the land use zoning and planning requirements of the restored landfill site and other committed uses in the vicinity.

*Measures and arrangements to address development constraints of restored landfill site*

- A2.2 All proposed projects should be feasible from engineering and environmental perspectives. Applicants should take note of the development constraints as outlined in section 1.3.3 of the “Guide to Application” as well as those identified in the **Information Kit** of the restored landfill site under application. For example, applicants should take note of the loading limit and geotechnical condition of the restored landfill site under application in designing and devising their proposals.
- A2.3 Loading limit of the restored landfill site may vary from one landfill site to another. The limit has been clearly spelled out in the Information Kit of the restored landfill site concerned. Generally speaking, because of the loading limit constraint, building structures erected on restored landfill sites are mostly one to two storeyed structures. It will be unrealistic for instance to propose to build a 10-storeyed building complex on the restored landfill site.
- A2.4 There are a number of aftercare facilities such as underground landfill gas and leachate management systems, environmental monitoring wells, extraction wells etc. distributed on the restored landfill surface to facilitate the carrying out of aftercare works. Any afteruse development shall not interfere the proper operation of these restoration and aftercare facilities, cover or hinder the carrying out of aftercare works at these facilities or otherwise these facilities should be properly relocated by a specialist contractor at the cost of the applicants.
- A2.5 Since restored landfills were originally developed for the dumping of wastes and not for other uses, there is generally no proper (or up to public road standard) access to the flat areas of the landfill sites. Applicant(s) shall prepare to make their own arrangement and incorporate necessary access arrangement, including any Emergency Vehicular Access (EVA) if required, in their design of the proposal.
- A2.6 In addition, there is no provision of water supply, electricity, public drainage / sewerage system or other public utilities available at the restored landfill site. Should such public utilities are required, applicant(s)

shall prepare to make their own arrangement and incorporate the arrangement in their design of the proposal. Applicant(s), upon selected, shall liaise and make arrangement with the utility undertakers on their own for the provision of such utilities and services, if necessary, during project implementation.

- A2.7 Proposed project should be compatible with the landfill restoration (e.g. the proposed development should not exceed the loading limit of the landfill site concerned) and aftercare works (e.g. the proposed development should not hinder the environmental monitoring work), **otherwise the project proposal would be considered as not feasible.**

*Compatibility with the land use zoning and planning requirements of the restored landfill site and other committed uses in the vicinity*

- A2.8 Most of the restored landfill sites are zoned as “Open Space”, “Green Belt” or “Recreation”. Any proposed project should take note of the Outline Zoning Plan (OZP) of the restored landfill site. Proposed projects should be compatible with the planning intention and requirements (in particular the permitted land use) of the zoning. **If the proposed project is not one of the permitted uses under the land use zoning of the restored landfill site concerned, the proposed project will be considered as not compatible.**

- A2.9 The full set of OZP including the Plan, Notes and Explanatory Statement is available at the website of the Town Planning Board (TPB) (<http://www.info.gov.hk/tpb/>).

- A2.10 Proposed project should be compatible to present and committed uses in the vicinity of the restored landfill sites.

### **A3. Technical aspects of the project**

- A3.1 After reviewing the engineering and environmental feasibility of the proposed projects, the technical aspects of the proposed projects will be considered. Applicants are required to fill in the following information and details in the Application Form:-

- (a) Conceptual plan and preliminary design of the proposed project, with illustration in drawings and layout plans as appropriate;
- (b) Building structures and facilities to be included in the proposed project, together with a plan showing the preliminary layout of these building structures and facilities on the restored landfill site;
- (c) Innovative design and use of the restored landfill site, and green architectural / landscape design, operation and management of the proposed project; and
- (d) Preliminary assessment, with justifications, on the likelihood of the proposed project in meeting the relevant legislation in force in Hong Kong.

*Conceptual plan and preliminary design of the project*

A3.2 Applicants are required to clearly indicate in the Application Form the conceptual and preliminary design of the proposed project, with illustration in drawings or layout plans as appropriate. In addition, applicants should list out all building structures and facilities, with approximate sizes, to be developed under the proposed project. Location of these buildings and facilities should be shown on a layout plan for reference.

A3.3 Besides, the measures and arrangement to address the restored landfill site development constraints, as referenced in A2, will also be considered as part of the technical design of the proposed projects.

*Innovative, environmentally friendly or green design and uses*

A3.4 While in the past years restored landfills are often developed into recreational parks or sports ground like the Ngau Chi Wan Park, Jordan Valley Park, and the Sai Tso Wan Recreation Ground, the Government welcomes any innovative proposal to be developed at the restored landfills under the Scheme. Innovative proposal as well as those that could upgrade the image of the district where the restored landfill is situated would be a merit in the assessment.

A3.5 Applicants are encouraged to adopt environmentally friendly elements and green architectural design or uses in their project proposals. The integration of green architectural / landscape design, operation and management is required. In general, reference should be made to the Government Circular on “Green Government Buildings”. Where appropriate, consideration to Appendix D of the Circular on “Other Green Measures / Practices for Enhancement of Building Environmental Performance” is encouraged.

A3.6 In addition, applicants, if selected, are required to observe the green measures and practices adopted in government buildings, where appropriate, in their design, operation and management of the selected projects. Reference should be made to the Government Circular on “Green Government Buildings”.

**A4 Project’s benefits and acceptance by the community**

A4.1 The main objective of the Scheme is to expedite the development of gainful afteruses at the restored landfills so that the community can benefit from them at the earliest opportunity. Therefore, proposed projects shall be beneficial and well acceptable by the community. To facilitate consideration and assessment of proposals in respect of this criterion, applicants are required to fill in information and details in the Application Form to show and demonstrate their proposed projects are beneficial and well acceptable by the community.:-

- (a) Services / facilities to be provided by the proposed project;
- (b) Target group(s) of the community using the proposed services / facilities;
- (c) Social and recreational value, environmental benefits and any other benefits of the proposed project; and
- (d) Acceptance and support from the community on the proposed project.



### *Project's benefits to the community*

- A4.2 Proposed project that could bring benefit(s) and is well accepted by the community would definitely be a merit in the assessment. Applicants should take note of the community's need and aspiration as well as the specific environment of the district where the restored landfill is situated in drawing up their proposal.
- A4.3 Applicants should list out and elaborate the social and recreational value, environmental benefits and any other benefits or achievements the proposed projects could bring up so that the Steering Committee could evaluate the benefits of the proposed projects to the community on the whole.
- A4.4 As the community particularly, those in the neighbouring districts, were affected / inconvenienced to a certain degree by the landfills during their active operation, they should be given opportunities in enjoying the afteruse of restored landfills. Generally speaking, a proposed project or facility which could be enjoyed and utilized by a larger group of community, rather than a small privileged group, would be more desirable and preferable.

### *Acceptance and support from the community*

- A4.5 Proposed projects that could address the community's need and are well accepted by the community are desirable. Applicants are therefore encouraged to touch base and seek support from the local community. Collaboration with the local community groups or organisations is also encouraged.
- A4.6 In addition, the Government would consult the relevant District Council (where the restored landfill is situated) to seek their initial views, from the local community angle, on the proposed uses based on the applications received. The District Council's views will be duly considered in the assessment of applications.

## **A5. Financial viability and sustainability of the project**

A5.1 Projects supported under the Scheme should be able to operate in a self-financing basis. In this regards, applicants are required to fill in information and details in the Application Form to show and demonstrate the proposed projects are financially viable and sustainable as well as information relating to estimated capital costs and operating expenses of the proposed projects:-

- (a) A 3-year business plan with details on mode of operation of the proposed project, proposed income-generating activities, projected income and operating expenses, assumptions and basis of calculations on income and cost of sales, target group(s) of user(s), demand of proposed services / facilities, staff cost projections and cost control measures; and
- (b) Estimated capital costs, starting costs and operating results of the project, source(s) of non-government funding (if any) and the amount of financial support required from the Government for the capital costs, starting costs and operating deficits (for a maximum of the first two years of operation) of the projects.

### *Business plan of the proposed project*

A5.2 Applicants are required to provide a business plan for the proposed project with details on the mode of operation of the proposed services / facilities, a list of income-generating services / activities, target clients, analysis of the market for demand of such services / facilities, operation plans, projected incomes and operating expenses<sup>4</sup>, staff cost projections for **the initial three years**, as well as the assumptions and basis of the estimation / calculations. The business plan will be critically scrutinized for assessment of the financial viability and sustainability of the proposed projects.

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<sup>4</sup> For operating expenses of the project, applicants are reminded to include, among others, the rates and Government rent for the proposed development on the restored landfill site. The amount of rates and Government rent to be paid will depend on the size and usage of the site, size and nature of the properties and facilities developed on the site, location of the site, etc.

- A5.3 All approved projects supported under the Scheme should be of non-profit-making in nature. Nevertheless, to help maintain the financial viability and sustainability of the projects, a certain amount of income-generating services / activities would be allowed in their business plan, without compromising or diminishing the intended uses of the restored landfill sites. The proposed nature and extent of these income-generating services / activities should be clearly spelled out and illustrated in the proposal submitted. The pursuit of maximum profit shall not be the primary objective of the proposed project. Any revenue earned from these activities / the project has to be ploughed back to the dedicated account for operation of the project.
- A5.4 There is no specific limitation or restriction on the nature and extent of the income-generating services / activities for a particular project, which will be considered on a case-by-case basis by the Steering Committee in the light of the nature of individual project proposals. Nevertheless, in evaluating the proposed income-generating services / activities, a common sense approach and a proportionality test will be adopted in assessing the applications and on the merit of each case. The intended uses of the restored landfill sites as prescribed by the project proposals should not be compromised or diminished by the proposed income-generating activities. In any case, activities which are illegal, immoral, contravening the principle of environmental protection, contain elements which are offensive, affecting the image of the Government or in relation to tobacco or hard liquor etc. are not acceptable. The launching of any income-generating services / activities at the restored landfill site shall obtain written consent from the Steering Committee / ENB / EPD **in advance** and subject to the terms and conditions as required by the Steering Committee / ENB / EPD.
- A5.5 While the selected applicant can charge fees for the use of part of the restored landfill on a short-term basis, e.g. to an cultural group for organising an exhibition, to a performance company for staging a performance / concert or to a school / educational group for organising a summer camp (such usages shall be included in the list of income-generating services / activities of the business plan of the proposal), **no subletting of the landfill site, in part or in whole, will be allowed unless with the prior approval of the Steering Committee**

**and ENB / EPD.** In general, proposal for subletting would be considered on the merit of each case taking into account (i) the percentage of site area for subletting (the larger the percentage, the less desirable); (ii) the duration involved (the longer the duration, the less desirable) and should be compatible with the approved uses of the site. Rent for any subletting of the landfill site, if approved, should be charged in accordance with the market price.

*Estimated capital costs, starting costs and operating expenses of the project and the amount of financial support required from the Government*

- A5.6 As spelled out in section 4.2, the Government will provide capital grant to the selected applicant(s) to cover the costs, in part or in full, for the capital works and related matters as set out in sections 4.2.2 (a) to (e) of the selected project where necessary, subject to a cap of \$100 million per approved project (in MOD prices).
- A5.7 Applicants are required to indicate the estimated amount of the capital costs of the proposed projects as well as the proposed amount of capital grant needed from the Government, if any. Applicants are reminded to include all the costs that spelled out in sections 4.2.2 (a) to (e) as the capital costs of the proposed projects.
- A5.8 Applicants are also required to state in the Application Forms whether they are applying or have already applied for sources of other non-government funding, as well as the amount of funding, for the capital works or starting costs and operating expenses of the proposed projects. Donations or any other forms of subsidy, if any, should be clearly indicated.
- A5.9 **To avoid duplication of funding support for the capital works of any single project from the government sources, applicants seeking funding support on capital cost under this Scheme should not apply or accept funding support on capital cost from other government sources otherwise the applications will not be considered.**

A5.10 The capital works of the proposed projects should be appropriate and reasonable. The Steering Committee will examine the estimated capital costs of the proposed project, and proposed amount of capital grant needed from the Government, if any, and consider whether the amounts are justified, appropriate and reasonable.

A5.11 Based on the business plans of the proposed projects, applicants should provide an estimate of the starting costs required and operating deficits, if any, of the proposed projects in the first two years' operation. Applicants should also state the amount of subsidy needed, if any, from the Government for meeting the starting costs and operating deficits of the projects for a maximum of the first two years of operation. (Please refer to section 4.3 on the scope of the subsidy for starting costs and operating deficits). Taking note of the business plans of the proposed projects, the Steering Committee will examine the estimated starting costs and operating expenses of the proposed project, and proposed amount of subsidies needed from the Government, if any, and consider whether the amounts are justified.

**A6. Management capability of the applicant**

A6.1 Applicants are required to demonstrate their capability in delivering the projects as proposed. They are required to fill in information and details in the Application Form to show and demonstrate they have the ability to take forward their proposals:-

- (a) Institutional set up, including board of directors, of the applicant;
- (b) History and objectives of the applicant;
- (c) Core services provided by the applicant;
- (d) Sources of income of the applicant;
- (e) Level of commitment and resources to deliver the proposed project;
- (f) Track record and past experience, of the applicant and/or their key

staff and project team, in planning, designing and developing / constructing similar project (including green design) (if any);

- (g) Track record and past experience, of the applicant and / or their key staff and project team, in operating similar project (including green operation and management aspects) (if any); and
- (h) Supplementary Information (if any) (e.g. support from third-party endorser(s) and cross sector collaboration).

A6.2 Joint applications involving two or more organisations (NPOs or NSAs) are welcome, they will be assessed jointly for this aspect. Nevertheless, there should be clear accountability arrangement where each application should have only one principal applicant.

#### *Management capability of applicant*

A6.3 Based on applicants' institutional set up, staffing arrangement, level of commitment, history and objectives of organisation, core services provided, sources of income, support from third-party endorser(s), cross sector collaboration etc., the Steering Committee will assess the applicants' capability in delivering the projects as proposed.

A6.4 The Steering Committee will also assess any backup from the applicants' parent organisations / headquarters (if any), in terms of both manpower and financial support, on the proposed projects. Backup and support from applicants' parent organisations / headquarters (if any) is considered helpful and valuable particularly during initial operating period or at times when the income of the projects is less than projected.

A6.5 Applicants could provide supplementary information, e.g. support from third-party endorser(s) (e.g. local community groups) and cross sector collaboration to support their ability to take forward the proposed projects.

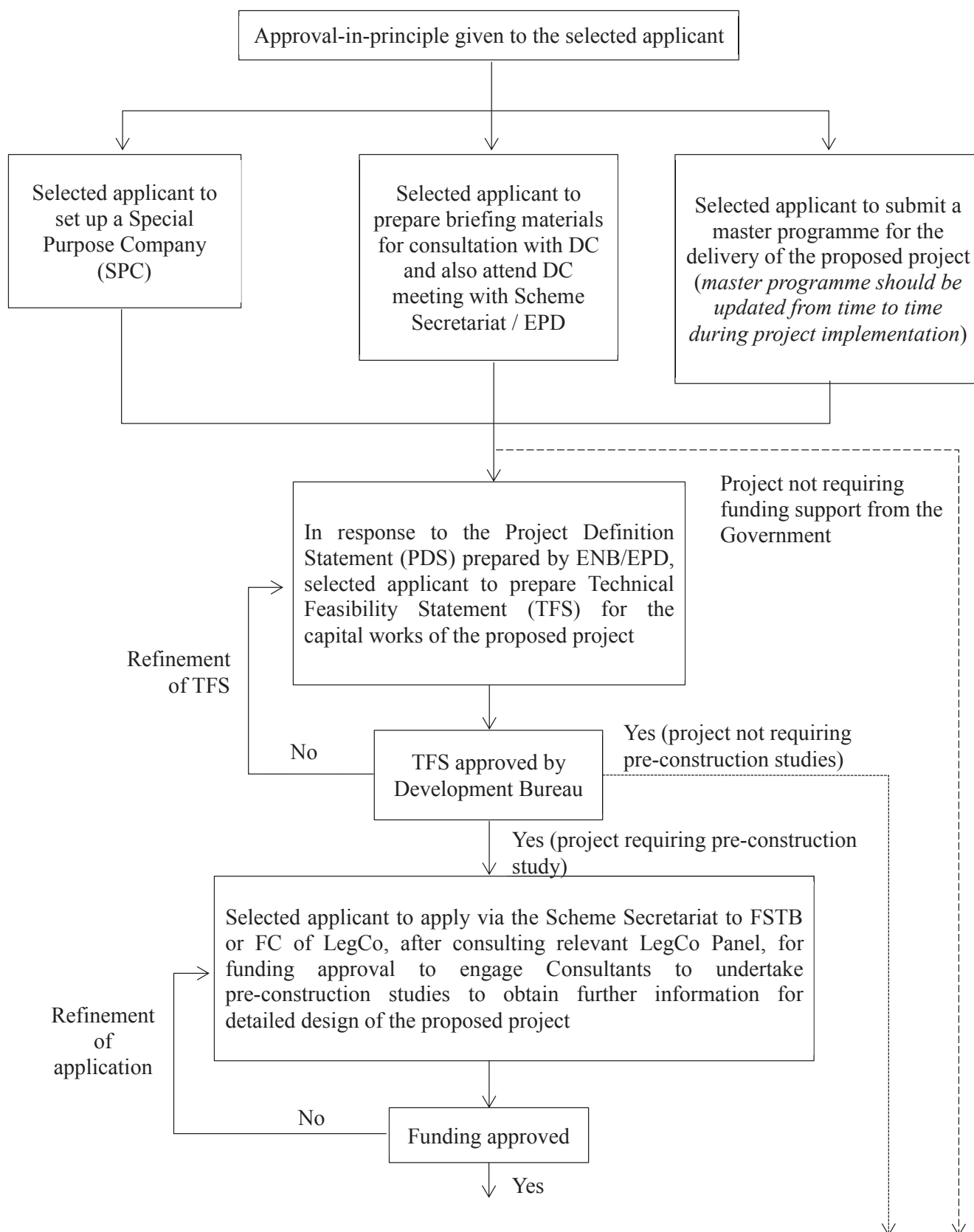
A6.6 Cross sector collaboration refers to the collaboration among the cultural, recreational, sports, professional and business sectors in implementing the proposal. Cross sector collaboration may help supplement individual

applicant's inadequacy in certain area and help enhance the management capability of the applicant's project team in delivering the proposed project.

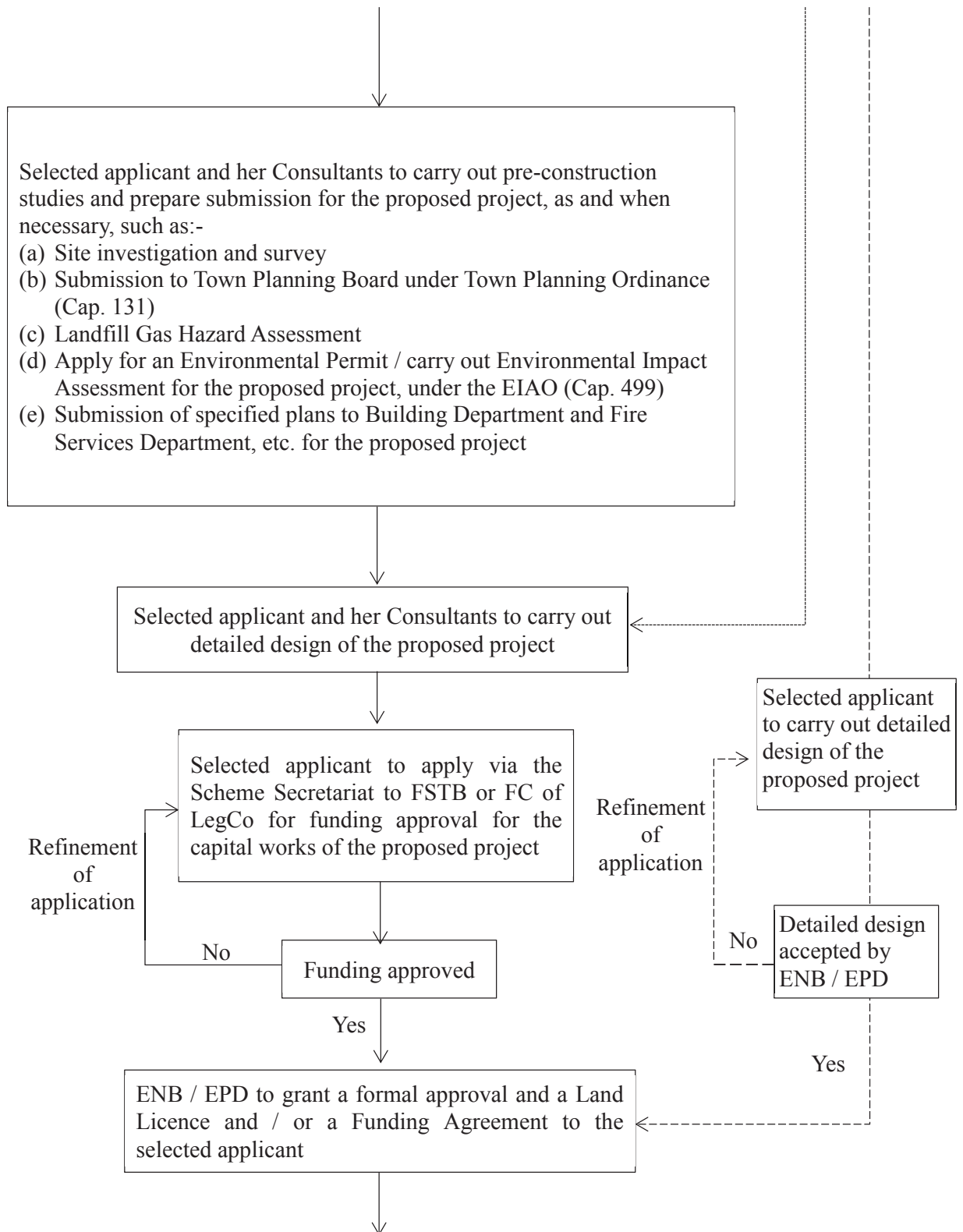
*Track record and past experience in delivering similar projects*

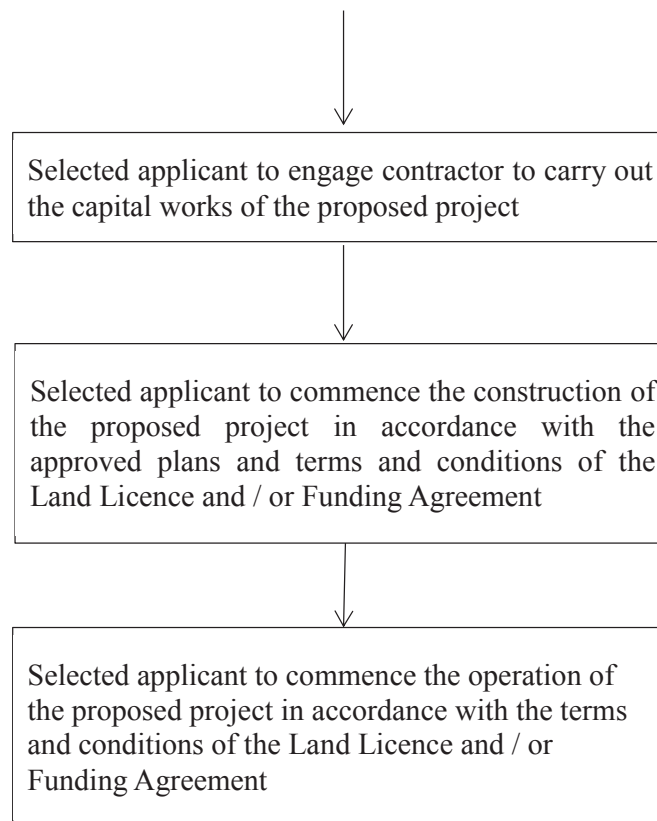
- A6.7 In assessing the applicants' capability in delivering the proposed projects, the Steering Committee will assess the applicants' track record and past experience (both the applicant organisation and / or their key staff / project team,) on planning, designing, developing and operating similar nature and scale of project (including green design, green operation and management). Both local and overseas records and experience will be considered.

## Flow Chart on Implementation of Proposal After Approval-in-principle









**A brief account of Chapter 8 of Report 70  
“Sha Tin Section of Route 8”  
by the Director of Audit  
at the Public Hearing of the Public Accounts Committee  
of the Legislative Council on Tuesday, 29 May 2018**

Mr. Chairman,

Thank you for inviting me to give a brief account of Chapter 8 of Report No. 70 of the Director of Audit, entitled “Sha Tin Section of Route 8”.

This Audit Report comprises four PARTs.

PART 1 of the Report, namely “Introduction”, describes the background to the audit.

Route 8 links Sha Tin with North Lantau via Cheung Sha Wan and Tsing Yi. This 27.7-kilometre (km) expressway comprises three road sections, namely North Lantau Section (14.5 km), Tsing Yi Section (7.6 km) and Sha Tin Section (5.6 km). In order to alleviate traffic congestion at the then existing road links between Kowloon and Sha Tin, and meet the future traffic demand, the Government commenced the construction of Sha Tin Section (linking Sha Tin and Cheung Sha Wan) in 2002. The construction was implemented through awarding three works contracts (referred to as Contracts A, B and C in the Report) and a traffic control and surveillance system (TCS System) contract (Contract D). The project works under Contracts A, B and D were implemented by the Highways Department (HyD) while those works under Contract C were entrusted to the Civil Engineering and Development Department (CEDD) for implementation. The design and construction supervision work of Sha Tin Section were conducted under Consultancy X (for Contracts A and B by Consultant X) and Consultancy Y (for Contract C by Consultant Y).

The Finance Committee (FC) of the Legislative Council approved funding of \$7,080 million in total for the investigation, detailed design and construction of Sha Tin Section. After the substantial completion of the main works, Sha Tin Section was commissioned in March 2008. As of December 2017, the Government had incurred \$6,180 million for the Sha Tin Section

project. Although the total expenditure of the four contracts was higher than the original contract sum by about \$1,000 million, the total expenditure of the Sha Tin Section project was \$900 million (13%) below the funding approved by the FC.

The Audit Commission (Audit) has recently conducted a review of Sha Tin Section of Route 8, covering mainly Contracts A to C. For contract D which involved the implementation of the TCS System for both Sha Tin Section and Tsing Yi Section, an audit review of Tsing Yi Section in 2014 had covered this contract.

PART 2 of the Report examines the administration of Contract A by the HyD.

Contract A mainly covered the construction of a dual three-lane Lai Chi Kok (LCK) Viaduct from Lai Wan Interchange to Butterfly Valley and a carriageway within Butterfly Valley, with a total length of 1.9 km. The HyD awarded Contract A to Contractor A in September 2003 at a contract sum of \$1,070 million and the contract period was about 49 months. The contract works were completed in November 2009, about 24 months later than the original completion date. The total contract expenditure (including payment for contract price fluctuation) was \$1,445 million. In the construction of the viaduct, there were disputes under Contract A and disputes under Consultancy X. The disputes under Contract A mainly consisted of two key issues, namely adequacy of the design for viaduct structure and erection, and measurements and valuations of additional or varied works (a majority of which were related to the viaduct design). The disputes under Consultancy X were mainly in respect of the viaduct design issues. In the event, on a “without admission of liability” basis, the Government agreed to pay \$273 million to Contractor A and Consultant X agreed to pay \$133 million to the Government to settle all the disputes under Contract A and Consultancy X.

Audit examination revealed that in the course of disputes resolution, having considered legal opinion and views of an engineering expert on the design of LCK Viaduct, the HyD noted that the construction and erection loadings did not appear to have been properly considered in Consultant X’s design and that Consultant X’s response to a tender query requesting clarification of the temporary loads used in Consultant X’s design could lead to confusion that construction and erection loadings had been considered in Consultant X’s design. Therefore, Audit has recommended that the HyD

should, in implementing a works project in future, take measures to strengthen vetting of a consultant's design and handling responses to tender queries, including reminding consultants to provide a clear and accurate response.

PART 3 of the Report examines the administration of Contract B by the HyD and Contract C by the CEDD.

Contract B covered the construction of a 2.1 km long dual three-lane Eagle's Nest (EN) Tunnel and associated works. The HyD awarded Contract B to Contractor B in September 2003 at a contract sum of \$1,836 million and the contract period was about 49 months. The contract works were completed in February 2009, about 15 months later than the original completion date. The total contract expenditure (including payment for contract price fluctuation) was \$2,317 million. Audit examination revealed that, in Contract B, there were discrepancy between contract clause and contract drawing and unclear contract clauses for measurement of tunnelling works. As a result, relevant works items were omitted in the Bills of Quantities. In the event, the HyD paid \$98.3 million in total to Contractor B for the relevant works items. In this connection, Audit has recommended that the HyD should, in preparing documents for a works contract in future, take measures to strengthen the checking of consistency between contract clauses and contract drawings and the vetting of tender documents regarding contract clauses for the measurement of works.

Contract C mainly covered the construction of a dual three-lane Sha Tin Heights (STH) Tunnel and a tunnel approach road in Tai Wai, with a total length of 1.6 km. The CEDD awarded Contract C to Contractor C in November 2002 at a contract sum of \$1,074 million and the contract period was about 54 months. The contract works were completed in September 2008. The total contract expenditure (including payment for contract price fluctuation) was \$1,200 million. Audit examination revealed that, due to a processing error during the drafting of Contract C by the CEDD, the period for Contractor C to provide facilitation works to enable the HyD contractors to carry out follow-on works at its site areas was defined to be about 7.5 months, instead of the agreed duration of 9 months. Therefore, Audit has recommended that the CEDD should, in preparing contract clauses for time programmes for a works contract in future, take measures to ensure their accuracy and consistency.

PART 4 of the Report examines the usage and management of Sha Tin Section.

One of the justifications for constructing Sha Tin Section of Route 8 was to alleviate the traffic congestion at the road links between Kowloon and Sha Tin, in particular Lion Rock Tunnel and Tate's Cairn Tunnel. According to the statistics of the Transport Department (TD), as of April 2017, during weekday peak hours, EN Tunnel and STH Tunnel of Sha Tin Section still had spare capacity while Lion Rock Tunnel and Tate's Cairn Tunnel had exceeded their respective design capacities. In this regard, Audit has recommended that the TD should explore measures to make better use of the spare capacity of Sha Tin Section of Route 8 to alleviate the traffic congestion at the road links between Kowloon and Sha Tin.

Sha Tin Section, together with Tsing Yi Section of Route 8, form the Tsing Sha Control Area (TSCA). The TD has outsourced the management, operation and maintenance of the TSCA to an operator through open tender since commissioning of Sha Tin Section. Government departments (such as the TD, the Electrical and Mechanical Services Department and the Architectural Services Department) monitor the operator's performance under their respective purview. Audit examination revealed that the operator was not able to continuously maintain the required staff manning level since the commencement of the contract in September 2013. In particular, the staff shortfall problem for electrical and mechanical staff was more significant. In addition, as of December 2017, the manning level of administrative and supporting staff and that of building maintenance staff had not been monitored since the commencement of the contract. Therefore, Audit has recommended that the TD should, in collaboration with the relevant departments, take measures to ensure that the TSCA operator complies with the manning level requirement in the contract and to monitor the operator's performance effectively.

Our views and recommendations were agreed by the relevant departments. I would like to take this opportunity to acknowledge with gratitude the full cooperation, assistance and positive response of their staff during the course of the audit review.

Thank you, Mr. Chairman.

**Legislative Council Public Accounts Committee**  
**Public Hearing on Report No. 70 of the Director of Audit**

**Sha Tin Section of Route 8 (Chapter 8)**

**Opening Remarks by Secretary for Transport and Housing**

Chairman,

I would like to thank the Audit Commission (Audit) for its comprehensive audit work and valuable comments with regard to the execution and administration of works contracts by the Highways Department (HyD) and the Civil Engineering and Development Department (CEDD) for Sha Tin Section of Route 8, as well as the usage and management of the concerned road section which fall within the purview of the Transport Department (TD). My thanks also go to the Public Accounts Committee for giving us an opportunity to explain the relevant details.

2. Overall, we accept the recommendations made by the Audit in the Director of Audit's Report (the Audit Report). We are actively directing the relevant departments to take follow-up actions as appropriate. The Transport and Housing Bureau (THB) has been supporting the work of the works departments at policy level. We held meetings and maintained close and regular communication with the management of HyD to understand and monitor the construction progress of Sha Tin Section of Route 8. Besides, THB provided directional guidance on the implementation of the works project as and when necessary with a view to completing the works project smoothly in compliance with the relevant policy and procedures. Since the opening of the concerned road section, THB and TD have been closely monitoring its usage and TD is also responsible for monitoring the performance of the operator of the Tsing Sha Control Area (TSCA), with the aim of introducing measures in a

timely manner to improve the traffic condition and enhance the operational efficiency of the operator.

3. In the light of the recommendations made by the Audit in the Audit Report, I have instructed the relevant departments to conduct a critical review and take improvement measures accordingly. Regarding the administration of works contracts, the Audit Report recommends that works departments should strictly comply with the relevant requirements and guidelines when vetting designs and handling tender queries. As a matter of fact, HyD revised the Structures Design Manual for Highways and Railways in August 2006 and May 2013, stipulating that any design of highway structures by consultants or contractors employed by the Government should be checked independently at an appropriate level by a professional or a team of professionals. Moreover, a working group has been set up by the works departments to review the guidelines on handling tender queries in the Project Administration Handbook for Civil Engineering Works (PAH) which is applicable to all works projects overseen by works departments. Upon completion of the review, the working group will enhance the guidelines on handling tender queries in the PAH.

4. HyD will continue to handle tender queries in accordance with the guidelines set out in the PAH and strictly follow the requirements which are planned to be included in the PAH. At the same time, HyD will extend the existing mechanism for checking tender documents to cover responses to tender queries, so as to enhance the monitoring of and guidance on the responding procedures and relevant content, thereby minimising the potential impact of the responses to tender queries on the works contract caused to the departments.

5. The Audit Report also recommends that in preparing documents for a works contract, the department concerned should strengthen the checking of the works contract and relevant documents, including contract clauses, drawings, Bills of Quantities (BQ) and works schedules of other interface



works. In fact, CEDD revised the PAH in October 2010, requiring that items omission should be minimised as far as practicable and the BQ should undergo a checking process. In response to the recommendation in the Audit Report, HyD will require its staff or consultants to conduct an independent checking for the BQ set out in contracts in future. Furthermore, the working group comprising representatives of works departments that I have just mentioned is currently reviewing the relevant guidelines in the PAH. It intends to expressly require the departments to carefully check the works schedules of the interface works when preparing tender documents for a works contract that involves interfacing works with other contracts, so as to ensure that no conflict will arise between the works. HyD, in preparing tender documents for such type of contracts in future, will continue to comply with the requirements set out in the PAH and check carefully to ensure that the planned programme of the interface works in all contracts are consistent.

6. As regards the recommendations on improving the usage of Sha Tin Section of Route 8 in the Audit Report, TD has commenced a study on the rationalisation of traffic distribution among the three road harbour crossings and the three land tunnels between Kowloon and Sha Tin (including the Eagle's Nest Tunnel and Sha Tin Heights Tunnel at Sha Tin Section of Route 8). We will consult the Panel on Transport about the findings of the study within the current legislative session. Meanwhile, TD has proposed seven improvement items for bus routes operating via Sha Tin Section of Route 8 in the 2018-2019 Bus Route Planning Programmes and is seeking comments from the relevant District Council(s).

7. As for the management of the performance of the TSCA operator, TD and the Government Monitoring Team (GMT), comprising TD and other departments, have jointly taken corresponding actions to improve the management of the operator. Moreover, TD and other members of the GMT have implemented improvement measures according to Audit's

recommendations, including setting out clearly the monitoring responsibility of each GMT member, keeping under review the TSCA operator's performance, and taking timely actions to monitor and follow up on the manning level requirements of all types of staff of the TSCA operator. TD will also review the specification of staff manning level requirement in the tender and contract documents, and set out a clear methodology for calculating liquidated damages in the next contract to be renewed in 2019.

8. I thank the Director of Audit and his colleagues for the independent and professional value-for-money audit review. THB and relevant departments agree with the contents of the Audit Report and accept the recommendations therein. THB will continue to provide guidance and steer to the departments as appropriate at the policy level, and closely monitor the implementation progress and condition of the various improvement measures, so as to ensure that the recommendations are effectively and fully implemented. We aim to further enhance the usage and management of Sha Tin Section of Route 8, and the quality of administration of contracts of other works projects in future.

9. The details of the construction works contracts for Sha Tin Section of Route 8 and the specific measures in relation to traffic management involve the daily operations of the departments and technical issues. Our heads of departments will be pleased to answer questions from Members. Thank you.



**HIGHWAYS DEPARTMENT  
MAJOR WORKS PROJECT MANAGEMENT OFFICE**

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本署檔案 Our Ref. : ( ) in HyD MWO 11/1/694TH/1/9/2 (C)  
來函檔號 Your Ref. : CB4/PAC/R70  
電 話 Tel. : 2762 3600  
圖文傳真 Fax : 2714 5224

17 May 2018

Clerk to Public Accounts Committee  
Legislative Council,  
Legislative Council Complex  
1 Legislative Council Road  
Central, Hong Kong

(Attn.: Mr Anthony CHU )

Dear Sirs,

**Public Accounts Committee**

**Consideration of Chapter 8 of the Director of Audit's Report No. 70**

**Sha Tin Section of Route 8**

Thanks for your letter of 3 May 2018 requesting information about the administration of Contracts A and B. The requested information set out in your letter is enclosed at the Annex.

Yours faithfully,

(Kelvin K W LO)  
for Director of Highways

c.c.	STH	(Attn.: Ms CHUNG Sui-kei, Judy)
	SDEV	(Attn.: Mr CHAN Fuk-yiu, Victor)
	DCED	(Attn.: Mr LAM Tat-ming, Terence)
	SFST	(Attn.: Ms HSIA Mai-chi, Margaret)
	Director of Audit	(Attn.: Mr TEO Wing-on)

**Public Accounts Committee**  
**Consideration of Chapter 8 of the Director of Audit's Report No. 70**

**Sha Tin Section of Route 8**

- (a) *guidelines, documents and handbook stipulating the role and responsibilities of a public works consultant and the client department, such as the Highways Department (“HyD”);*

The roles and responsibilities of a public works consultant are mainly laid down in the following documents:

- i) General Conditions of Employment of Engineering and Associated Consultants for a Design and Construction Assignment (“GCE”) (**Appendix A**);
- ii) General Conditions of Contract for Civil Engineering Works (“GCC”) (**Appendix B**). The consultant is designated as “the Engineer” referred to therein;
- iii) Project Administration Handbook for Civil Engineering Works (“PAH”) (paragraph 3.7 of Chapter 4, Chapter 5 and paragraph 3.12 of Chapter 6 at **Appendix C**); and
- iv) Works Technical Circulars of Development Bureau (“DEVB TC(W)”) (DEVB TC(W) Nos. 5/2017, 6/2017, 7/2017, 8/2010, 8/2017, 1/2018, 3/2018 and 19/2005)<sup>1</sup> (**Appendix D**).

The roles and responsibilities of a client department are mainly laid down in the following documents:

- i) GCE (**Appendix A**);
- ii) Handbook on Selection, Appointment and Administration of Engineering and Associated Consultants (Clause 8.1.1 to 8.1.3 of the Handbook at **Appendix E**);
- iii) GCC (**Appendix B**);
- iv) PAH (paragraph 3.7 of Chapter 4, Chapter 5 and paragraphs 3.12 of Chapter 6 at **Appendix C**);
- v) Sections 345 to 350 in Chapter 3 of Stores and Procurement Regulations

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<sup>1</sup> PAH is regularly revised to incorporate the applicable DEVB TC(W). The latest revision of PAH Chapters 4 to 6 were promulgated from Oct to end 2017 and the newly promulgated DEVB TC(W) listed above have not yet been subsumed in the current version of PAH.

**\*Note by Clerk, PAC:** *Appendices A to E not attached.*

**(Appendix F)**; and

- vi) Works Technical Circulars of Development Bureau (“DEVB TC(W)”) (DEVB TC(W) Nos. 5/2017, 6/2017, 7/2017, 8/2010, 8/2017, 1/2018, 3/2018 and 19/2005)<sup>1</sup> (**Appendix D**).

***(b) in relating to Consultant X for Contract A in Part 2 of the Audit Report, any additional guidelines, documents or contract provisions which stipulate the role and responsibilities of the consultant and HyD;***

In addition to the standard documents listed in part (a), the roles and responsibilities of the consultant and HyD in relation to Consultant X for Contract A are laid down in the following documents:

- i) The consultancy agreement for Agreement No. CE 50/98 – Route 8 between Cheung Sha Wan and Sha Tin Design and Construction Assignment (“Consultancy Agreement”) (**Appendix G**); and
- ii) Special Conditions of Contract of the contract documents for Contract No. HY/2003/01 – Route 8 Lai Chi Kok Viaduct (**Appendix H**). The consultant is designated as “the Engineer” referred to therein.

***(c) whether HyD has a duty to vet output of its consultants? If yes, any guidelines papers or handbook on the workflow and procedure for HyD to vet a consultant’s work, such as contract drawings and responses to a tender query;***

For civil engineering projects for which consultants are engaged to provide professional services (“Services”), the terms of the consultancy agreements (e.g. the Memorandum of Agreement) stipulate that the consultants shall provide and complete the Services in accordance with the agreements. The Services cover the preparation of the tender documents, drawings and other deliverables.

For HyD’s consultancies (i.e. with HyD as the client department), the consultants shall submit deliverables, including but not limited to tender documents and drawings, to HyD for acceptance as required and in accordance with the consultancy agreements. Generally, the consultants will submit the draft deliverables to HyD and other departments concerned for comments. The departments will review and provide comments on the respective parts of deliverables falling within their ambit. For HyD itself, to ensure that the

***\*Note by Clerk, PAC: Appendices F to H not attached.***

consultants' work complies with the requirements stipulated in the PAH (Appendix C) and the consultancy agreements, HyD had issued a document entitled "HQ/GN/02 Guidelines for Checking Submissions of Consultants" ("HQ/GN/02") (Appendix J) setting out the principles for checking the submissions prepared by the consultants.

After the consultants have resolved the comments by departments and revised the deliverables accordingly, HyD will accept the deliverables according to the consultancy agreements if the submitted deliverables are in order. Nevertheless, no such approval shall affect the responsibility of the consultants in connection with the Services according to GCE Clause 15(C).

- (d) *the workflow and procedure for HyD to vet the contract drawings and response to a tender query produced by Consultant X (paragraphs 2.15-2.24 of the Audit Report refer), including a chronology of communication between HyD and Consultant X on the matters referred in the Audit Report, and the number, rank and qualifications of HyD staff involved and whether other government bureau/departments were consulted;*

#### Contract Drawings

Consultant X had been employed to provide professional services in respect of the Project. According to the terms of the Consultancy Agreement (Appendix G) and PAH (Appendix C):

- i) Consultant X shall carry out detailed design with specifications, drawings, dimensions, sections, design data and calculations, checking and other information, of all aspects of the work, under the Consultancy Agreement (see Clause 6.3.1 of the Brief in the Consultancy Agreement at Appendix G);
- ii) The design submission shall be accompanied by a certification that the design calculations have been checked by another qualified independent designer in the Consultants' employ and that the drawings are in accordance with the calculated designs (see Clause 11 of the Brief at Appendix G);
- iii) The designs of highway structures shall be submitted to the then Structures Division (now renamed as Bridges and Structures Division) of the Highways Department ("B&S") for comments on the proposed structural form and maintenance aspects (see Clause 11.1, Appendix 2 of the Brief

**\*Note by Clerk, PAC:** *Please see Appendix 21 of this Report for Appendix J.*

at Appendix G);

- iv) In addition, the project management office (“PMO”) of HyD (i.e. the client office/division) shall be kept informed according to the Consultancy Agreement (see Clauses 5.1 and 6.1.21 of the Brief at Appendix G); and
- v) The consultants shall also submit a complete set of design drawings to the client office/division) at the end of the design stage, together with a certification for the proper completion of the design process and checking of the design (see paragraph 3.7 of PAH Chapter 4 at Appendix C and Clauses 6.3 and 11 of the Brief at Appendix G)

The B&S is to provide technical input on the structural aspects of the design while the PMO is responsible for administrating the consultants and ensuring the requirements of the Consultancy Agreement are properly followed. In vetting contract drawings, HyD follows HQ/GN/02 (Appendix J) to carry out spot checks, which are defined as detailed checks on specific areas or items (see Clause 3.3 at Appendix J).



The chronology of communication between HyD and Consultant X on the viaduct design before the tender close is summarized as follows:

<b>Date</b>	<b>Details of the communication</b>
2 April 2002	Consultant X submitted the design to the PMO
10 April 2002	The PMO provided comments on the design
12 April 2002	Consultant X submitted a design certification to the PMO
23 April 2002	The PMO provided comments on the design certification submission
14 May 2002	Consultant X submitted the design to B&S
2 July 2002	Consultant X responded to the PMO's comments on the design certification submission
30 July 2002	B&S provided comments on the design
30 August 2002	The Consultant circulated the general layout drawings
10 September 2002	B&S provided comments on the general layout drawings
18 December 2002	Consultant X submitted a complete set of drawings

The rank, number and qualification of HyD staff involved are as follows:

<b>Rank</b>	<b>Number</b>		<b>Qualifications</b>
	<b>PMO</b>	<b>B&amp;S</b>	
Chief Engineer	1	-	Corporate Membership of the Hong Kong Institution of Engineers (Civil Discipline) or equivalent
Senior Engineer	1	1	
Engineer	1	1	

According to the record, the drawings were circulated to HyD and the following departments for review and record:

- i) Transport Department;
- ii) Drainage Services Department;
- iii) Water Supplies Department;
- iv) Territory Development Department; and
- v) Civil Engineering Department.

### Tender Query

Regarding tender queries, PAH Chapter 6 (Appendix C) sets out the requirements for responding timeframe and providing the same information to all tenderers for fairness and transparency. There is no requirement to vet the consultants' responses.

The chronology of communication between HyD and Consultant X on the tender query in the Audit Report is summarized as follows:

<b>Date</b>	<b>Details of the communication</b>
17 April 2003	A tenderer issued the tender query to Consultant X.
22 April 2003	Consultant X forwarded the tender query to HyD for information.
5 May 2003	Consultant X issued the response to the tender query to the tenderers and copied the response to the tender query to HyD.

The rank, number and qualification of HyD staff involved are as follows:

<b>Rank</b>	<b>Number</b>	<b>Qualifications</b>
Chief Engineer	1	Corporate Membership of the Hong Kong Institution of Engineers (Civil Discipline) or equivalent
Senior Engineer	1	
Engineer	1	

No other departments were consulted concerning the tender query.

- (e) *a chronology of communication between HyD and the Financial Services and the Treasury Bureau (“FSTB”) and/or other departments regarding the extra-contractual settlement of claims with Contractor A (paragraphs 2.30 and 2.31 of the Audit Report refer);*

The chronology of communication between HyD and the FSTB and/or other department regarding the extra-contractual settlement of claims with Contract A is as follows:

<b>Date</b>	<b>Details of the communication</b>
20 July 2010	Memo from Legal Advisory Division (Works) of Development Bureau (“LAD(W)”) to HyD regarding the proposed payment-into-court <sup>2</sup> (“payment-in”)
21 July 2010	Memo from HyD to FSTB submitting a paper and seeking FSTB’s approval for a proposed amount of payment-in
1 December 2010	Memo from FSTB to HyD giving approval for the proposed amount of payment-in
1 June 2012	Memo from LAD(W) to HyD regarding the proposal of increasing the amount of payment-in
21 June 2012	Memo from HyD to FSTB submitting a paper and seeking FSTB’s approval for increasing the amount of payment-in
17 July 2012	Email from HyD to LAD(W) informing LAD(W) that Contractor A approached HyD for exploring the possibility of settling the disputes without continuing the arbitration proceedings
18 July 2012	Meeting between HyD and LAD(W) regarding the possibility of settling the disputes
27 July 2012	Email from HyD to LAD(W) enclosing a draft version of the settlement proposal for LAD(W)’s comment
31 July 2012	Meeting between HyD and LAD(W) regarding the

<sup>2</sup> Arrangements for “payment-into-court” and the associated costs implications are set out in the Rules of the High Court. If the Contractor does not accept the “payment-into-court” and if the sum awarded by the arbitrator is less than the “payment-into-court”, the following order on costs (i.e. the costs of the arbitration proceedings including legal fees, experts’ fees and fees and expenses of the arbitrator) will usually be made: (a) the Contractor will receive its costs up to the time allowed for acceptance of the “payment-into-court” (i.e., 14 days after the date of receipt of notice of the “payment-into-court”); and (b) the Contractor will have to pay Government’s costs as from that date up to the conclusion of the arbitration.

	proposed settlement
10 August 2012	Email from HyD to FSTB requesting the suspension of processing the application submitted on 21 June 2012
24 August 2012	Memo from LAD(W) to HyD regarding the proposed settlement
24 August 2012	Memo from HyD to FSTB submitting a paper and seeking FSTB's approval for the proposed settlement sum after reaching a non-committal consensus with Contractor A
11 October 2012	Memo of FSTB to HyD giving approval for the proposed settlement sum
24 October 2012	The Government and Contractor executed the Settlement Agreement

## **Contract B**

- (f) guidelines, documents and handbook on the procedure of drafting and vetting a works contract with scale similar to Contract B, and procedure and workflow on drafting and vetting contract clause and contract drawing of Contract B (paragraphs 3.5 to 3.9 of the Audit Report refer), including the number, rank and qualifications of HyD staff involved, and whether other government bureaux/departments were consulted;*

In general, the drafting and vetting of a works contract with scale similar to Contract B follow the requirements laid down in PAH Chapters 4, 5 and 6 (Appendix C). The key requirements are set out as follows:

- i) Paragraph 3.7 of PAH Chapter 4 stipulates that the consultants should submit a complete set of design drawings to the client office/division at the end of the design stage, together with a certification for the proper completion of the design process and checking of the design;
- ii) Paragraph 1.4 of PAH Chapter 5 stipulates that the responsibility for ensuring that tender documents are properly prepared rests with the professional officers handling the project. They would seek advice from the project office's contract adviser on tender documents if necessary;
- iii) Paragraph 1.5.1 of PAH Chapter 5 stipulates that all tender documents for contracts estimated to exceed \$300M in value must be submitted through the project office's contract adviser to the LAD(W) for legal vetting prior to calling for tenders;
- iv) Paragraph 2.2 of PAH Chapter 5 stipulates that the inclusion of the standard Special Conditions of Tender clauses requires the approval of an officer at D1 rank or above. When non-standard Special Conditions of Tender clauses are needed, approval will have to be given by an officer of at least D2 rank;
- v) Paragraph 5.2.3 of PAH Chapter 5 stipulates that all non-standard Special Conditions of Contract clauses may be drafted and used as required on the approval of the Head of Department/Office or those officers (not below the rank at D1) to whom this responsibility has been delegated;
- vi) Paragraph 9.40 of PAH Chapter 5 stipulates that project departments may adopt Special Conditions of Contract clauses for mega project contracts including any modifications thereto on the approval of the Head of

Department or his delegate. This delegation should not be down below the rank of D2 level;

- vii) Paragraph 6.1 of PAH Chapter 5 stipulates that amplifications and modifications to the General Specification (GS) should be made in the Particular Specification (PS). In supplementing the GS by a PS, compatibility of all changes must be ensured by the department preparing the tender documents. If changes are considered necessary, the revised items together with the reasons for the changes shall be submitted to the D1 (or higher) level officer administering the contract for approval; and
- viii) Paragraph 4.1.2 of PAH Chapter 6 stipulates that the project office needs to complete a tender procedure checklist and also the tender routing sheet, checklist and estimates summary to ensure that all relevant actions/procedures have been completed prior to tender invitation.

Furthermore, HQ/GN/02 (Appendix J) sets out the principle for checking submissions from the consultants. HyD will spot check the submissions according to this.

For Contract B, the contract clauses and contract drawings were drafted by Consultant X. HyD followed the aforementioned requirements set out in PAH (Appendix C) and HQ/GN/02 (Appendix J) in vetting contract clauses and contract drawings of Contract B. In summary, the PMO's officers handling the project spot checked the clauses and drawings, then the PMO's contract adviser commented and gave advice, and finally LAD(W) carried out a legal vetting of the concerned parts of the tender documents.

The rank, number and qualification of HyD staff involved are as follows:

Rank	Number	Qualifications
Chief Engineer	1	Corporate Membership of the Hong Kong Institution of Engineers (Civil Discipline) or equivalent
Senior Engineer	1	
Engineer	1	
Assistant Engineer	1	Assistant professional

According to the record, the contract clauses and contract drawings were circulated to HyD and the following departments for review and record:

- i) Transport Department;
- ii) Electrical and Mechanical Services Department;
- iii) Drainage Services Department;
- iv) Architectural Services Department;
- v) Fire Services Department;
- vi) Agriculture, Fisheries and Conservation Department;
- vii) Leisure and Cultural Services Department;
- viii) Water Supplies Department;
- ix) Territory Development Department; and
- x) Civil Engineering Department.

***(g) guidelines, documents and handbook on the procedure of drafting and vetting tender documents regarding contract clauses for the measurement of output of works (e.g. for tunneling works), and procedure and workflow on drafting and vetting tender documents regarding contract clauses for the measurement of Contract B (paragraphs 3.10 to 3.15 of the Audit Report refer), including the number, rank and qualifications of HyD staff involved, and whether other government bureau/departments were consulted; and***

In general, the drafting and vetting tender documents regarding contract clauses for the measurement of output of works with scale similar to Contract B follow the requirements laid down in PAH Chapters 5 and 6 (Appendix C). The key requirements are set out as follows:

- i) Paragraph 1.4 of PAH Chapter 5 stipulates that the responsibility for ensuring that tender documents are properly prepared rests with the professional officers handling the project. They would seek advice from the project office's contract advisers on tender documents if necessary;
- ii) Paragraph 1.5.1 of PAH Chapter 5 stipulates that all tender documents for contracts estimated to exceed \$300M in value must be submitted through the project office's contract adviser to the LAD(W) for legal vetting prior to calling for tenders;
- iii) Paragraphs 7.1 and 7.3 of PAH Chapter 5 stipulates that any amendments or alterations to the SMM to be adopted in the preparation of the BQ shall have the prior approval of an officer at D1 rank or above;
- iv) Paragraph 3.12 of PAH Chapter 6 stipulates the particulars of the quality assurance procedures to be followed for the preparation of bills of

quantities and particular preambles. Nevertheless, this requirement had not yet been included in the PAH (2008 version) at the time; and

- v) Paragraph 4.1.2 of PAH Chapter 6 stipulates that the project office needs to complete a tender procedure checklist and also the tender routing sheet, checklist and estimates summary to ensure that all relevant actions/procedures have been completed prior to tender invitation.

Furthermore, HQ/GN/02 (Appendix J) sets out the principle for checking submissions from the consultants. HyD will spot check the submissions according to this.

For Contract B, the contract clauses for the measurement of output of works were drafted by Consultant X. HyD followed the aforementioned requirements set out in PAH (Appendix C), except the requirement stipulated in paragraph 3.12 of PAH Chapter 6 which was not yet promulgated at the time of tender preparation of Contract B, and HQ/GN/02 (Appendix J) in vetting these clauses. In summary, the PMO's officers handling the project spot checked the clauses, then the PMO's contract adviser commented and gave advice, and finally LAD(W) carried out a legal vetting of the concerned parts of the tender documents.

The rank, number and qualification of HyD staff involved are as follows:

<b>Rank</b>	<b>Number</b>	<b>Qualifications</b>
Chief Engineer	1	Corporate Membership of the Hong Kong Institution of Engineers (Civil Discipline) or equivalent
Senior Engineer	1	
Engineer	1	
Assistant Engineer	1	Assistant professional



***(h) guidelines and handbooks on the scale of preliminary ground investigations to be conducted for a public works project with scale similar to Contract B (paragraph 3.22 to 3.24 of the Audit Report refer).***

Guideline on the scale of preliminary ground investigations to be conducted for a public works project with scale similar to Contract B is included in the following document:

- i) Geoguide 2 – Guide to Site Investigation published by Geotechnical Engineering Office (GEO) (**Appendix K**).

Concerning the documents referred to in our reply for items (a) to (h) above, we have, for environmental reasons, enclosed the relevant excerpts of the documents listed below as the full documents are too voluminous. The full version of these documents can be accessed via the web links listed as follows:

<b>Appendix</b>	<b>Document and Web Link</b>
C	Project Administration Handbook for Civil Engineering Works (Web Link: <a href="http://www.cedd.gov.hk/eng/publications/standards_handbooks_cost/stand_pa_h.html">http://www.cedd.gov.hk/eng/publications/standards_handbooks_cost/stand_pa_h.html</a> )
E	Handbook on Selection, Appointment and Administration of Engineering and Associated Consultants (Web Link: <a href="http://www.cedd.gov.hk/eng/publications/handbook_circulars/index.html">http://www.cedd.gov.hk/eng/publications/handbook_circulars/index.html</a> )
F	Chapter 3 of Stores and Procurement Regulations (Web Link: <a href="https://www.fstb.gov.hk/tb/en/docs/espr_chapter3.pdf">https://www.fstb.gov.hk/tb/en/docs/espr_chapter3.pdf</a> )
K	Geoguide 2 – Guide to Site Investigation published by Geotechnical Engineering Office (GEO) (Web Link: <a href="http://www.cedd.gov.hk/eng/publications/geo/geo_g2.html">http://www.cedd.gov.hk/eng/publications/geo/geo_g2.html</a> )

**\*Note by Clerk, PAC:** *Appendix K not attached.*



Web site 網址 : <http://www.cedd.gov.hk>  
E-mail 電子郵件 : [terencelam@cedd.gov.hk](mailto:terencelam@cedd.gov.hk)  
Telephone 電話 : (852) 2762 5004  
Facsimile 傳真 : (852) 2714 5174  
Our ref 本署檔號 : CEDD(CR) 11/39  
Your ref 來函檔號 : CB4/PAC/R70

香港九龍公主道 101 號  
土木工程拓展署大樓  
Civil Engineering and  
Development Building,  
101 Princess Margaret Road,  
Kowloon, Hong Kong

14 May 2018

(Urgent by fax 2543 9197)

Mr Anthony CHU  
Public Accounts Committee  
Legislative Council Complex  
1 Legislative Council Road,  
Central, Hong Kong

Dear Sir,

**Public Accounts Committee**  
**Consideration of Chapter 8 of the Director of Audit's Report No. 70**  
**Sha Tin Section of Route 8**

Thank you for your letter of 3 May 2018 enquiring information on Contract C of the subject Audit Report. I attach our reply in English and Chinese for your reference please.

A handwritten signature in black ink, appearing to read 'Terence T M LAM', is written over a horizontal line.

( Terence T M LAM )

for Director of Civil Engineering and Development

cc Secretary of Development (fax no. 2147 3691)  
Secretary for Transport and Housing (fax no. 2537 6519)  
Director of Highways (fax no. 2714 5203)  
Commissioner for Transport (fax no. 2802 2361)  
Director of Architectural Services (fax no. 2810 7341)  
Director of Electrical and Mechanical Services (fax no. 2882 9042)  
Secretary for Financial Services and the Treasury (fax no. 2147 5239)  
Director of Audit (fax no. 2583 9063)

***Guidelines, documents and handbook on the procedure of drafting and vetting a works contract with scale similar to Contract C***

The current procedures and guidelines for preparation of contract documents are mainly laid down in the following documents:

- Project Administration Handbook for Civil Engineering Works (PAH) – Chapters 5 and 6, which can be read or downloaded in the website of Civil Engineering and Development Department (CEDD): [http://www.cedd.gov.hk/eng/publications/standards\\_handbooks\\_cost/stan\\_pah.html](http://www.cedd.gov.hk/eng/publications/standards_handbooks_cost/stan_pah.html); and
- CEDD Integrated Management System Operation Procedure OP-05: Tendering Process (an expansion of procedures mainly under the framework of Chapters 5 and 6 of PAH) (see Annex A).

The professional officers handling the project may seek advice from the Contract Adviser of the department on the drafting of tender documents. All tender documents for contracts estimated to exceed \$300 million in value must be submitted through the Contract Adviser to the Legal Advisory Division (Works) of DEVB (LAD(Works)/DEVB) for legal vetting prior to calling for tenders.

The tender documents require approvals from the appropriate rank of directorate officers which are stipulated in the PAH:

<b>Tender Document</b>	<b>Reference</b>
Special Conditions of Tender	PAH Chapter 5 Para. 2.2
Special Conditions of Contract	PAH Chapter 5 Para. 5.2.3 & Para. 9.40
Particular Specification	PAH Chapter 5 Para. 6.1
Particular Preambles to Bills of Quantities	PAH Chapter 5 Para. 7.3
Whole tender documents	PAH Chapter 6 Para. 1

***Procedure and workflow on drafting and vetting Contract C, including the number, rank and qualifications of Civil Engineering and Development staff involved***

The then New Territories East Development Office of the Territory Development Department (TDD) was responsible for the tendering and management of Contract C. In July 2004, CEDD was formed upon the merging of the then Civil Engineering Department and the then TDD<sup>1</sup>. Thereafter, CEDD took over the management of Contract C. The design, tender preparation and construction supervision of Contract C were conducted by consultants under a consultancy agreement. The general procedure and workflow in relation to the drafting and vetting of the contract documents in accordance with the prevailing guidelines and requirements stipulated in PAH at that time were, as follows:

Consultants

The Consultants prepared the draft tender documents including specifications, bill of quantities, drawings and other documents as necessary to enable CEDD to invite tenders, in accordance with the duties defined under the consultancy agreement. These duties included consultation with all authorities and bodies or persons affected by the Project. The Consultants then submitted the draft documents to CEDD for approval.

CEDD

The project team vetted the draft documents to ensure they were properly prepared following the guidelines laid down in PAH.

After the project team was generally satisfied with the draft documents, they sought specific advice from the Contract Advisory Unit of CEDD Headquarters (HQ) on doubtful areas that were spotted on the tender documents. The project team also submitted the draft documents to LAD(Works)/DEVB for legal vetting via the Contract Advisory Unit. After that, the project team sought approval from the directorate officers on the tender documents in accordance with the guidelines of PAH Chapter 5.

Prior to tendering, the project team checked against the tender procedure checklist provided in PAH Chapter 6 that all the actions were completed, and


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<sup>1</sup> For simplicity, the then Territory Development Department is referred to as CEDD in this summary.

requested the approval for tender invitation by completing a “Calling for Tender – Routing Sheet” in accordance with the tender procedure outlined in PAH Chapter 6.

#### CEDD Staff Involved

The project team of CEDD, comprising a Senior Engineer and two Engineers led by a Chief Engineer, was responsible for the vetting the contract documents. The project team was under the supervision of the Deputy Project Manager and the Project Manager with support from CEDD HQ. The CEDD staff involved were all qualified professional civil engineers.


	Civil Engineering and Development Department			
	Procedure Title:	Tendering Process		
	Procedure No.:	OP-05	Page No.:	1 of 15
	Revision No.:	12	Effective Date:	1 April 2018

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Reviewed by: \_\_\_\_\_ Signed \_\_\_\_\_ Post: \_\_\_\_\_ SE/P2, FMD Date: \_\_\_\_\_ 17 Mar 2018  
(Name & Signature) HO Hei-yin, Bill

Approved by: \_\_\_\_\_ Signed \_\_\_\_\_ Post: \_\_\_\_\_ CE/FM Date: \_\_\_\_\_ 17 Mar 2018  
(Name & Signature) MOK Pang-ching, Peter

Rev No.	Page Affected	Revision Details	Effective Date
0	All	First issue to tally with the implementation of the new IMS in CEDD	1 Sept 2006
1	2, 3	New reference included	1 Mar 2007
2	3,4,5,6,7	New reference included	3 Mar 2008
3	All	Annual review	1 April 2009
4	All	Annual review	1 April 2010
5	All	Annual review	1 April 2011
6	All	Annual review	1 April 2012
7	All	Annual review	1 April 2013
8	All	Annual review	1 April 2014
9	All	Annual review	1 April 2015
10	All	General revision with deletion and addition of reference documents. Work Instruction No. CEO-OP-05-WI-01 (Preparation of Tender Documents) deleted.	1 April 2016

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11	All	Annual review	1 April 2017
12	All	Annual review	1 April 2018

## 1. Scope


- 1.1 This procedure is applicable to the tendering process for capital works contracts and term contracts managed by CEDD.

## 2. Objectives

- 2.1 The objective of this procedure is to ensure that the tendering process is properly implemented.


## 3. Reference Documents

- 3.1 CEDD Technical Circular (CEDD TC) No. 05/2017: Simplified Tendering Arrangement for Works Contracts not Exceeding \$55 million
- 3.2 CEDD Accounting and Supplies Guideline (CEDD ASG) No. 5/2017
- 3.3 CEO Circular No. 2/2001: Allocation of Contract Numbers
- 3.4 CEO Circular No. 5/2001: Reporting of Unit Cost Information after Contract Award
- 3.5 DTD's memo ref. (124) in TDD 6/7/52 Pt2 dated 13.1.2000
- 3.6 Financial Circular (FC) No. 5/2016: Parallel Tendering for All Contracts
- 3.7 FC No. 3/2009: Simplified Tendering Arrangement for Capital Works
- 3.8 Environment, Transport and Works Bureau Technical Circular (Works) (ETWB TCW) Nos. 15/1999, 15/1999A and 15/1999B: Improvement to Quality of Maintenance Works
- 3.9 ETWB TCW No. 30/2002: Implementation of Site Safety Cycle and Provision of Welfare Facilities for Workers at Construction Sites
- 3.10 ETWB TCW No. 50/2002: Contractors' Joint Ventures
- 3.11 Development Bureau Technical Circular (Works) (DEVB TCW) No. 8/2014: Examination of Tenders and Submission of Tender Reports
- 3.12 DEVB TCW No. 4/2014: Tender Evaluation Methods for Works Contracts
- 3.13 DEVB TCW No. 2/2014: Tender Procedures for Procurement governed by the Agreement on Government Procurement of the World Trade Organization
- 3.14 DEVB TCW No. 5/2015: Prequalification of Tenderers for Public Works Contracts


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- 3.15 ETWB TCW No. 6/2005: Implementation of Systematic Risk Management in Public Works Projects
- 3.16 ETWB TCW No. 19/2005: Environmental Management on Construction Sites, ETWB's Interim Guidance Note dated 19.06.2006 on "Environmental Management on Construction Sites" & SDEV's memo dated 22.11.2013 on "Pay for Safety Performance Merit Scheme"
- 3.17 ETWB TCW No. 4/2006 : Delivery of Capital Works Projects
- 3.18 AD(T), CEDD's memo ref. ( ) in CEDD T 7/4/7 dated 18.11.2005
- 3.19 DCED's memo ref. ( ) in CEDD T4/5/1 dated 27.4.2005
- 3.20 Stores and Procurement Regulations (SPR)
- 3.21 Project Administration Handbook for Civil Engineering Works (PAH) Chapter 5: Contract Documents
- 3.22 PAH Chapter 6: Tender Procedure
- 3.23 FSTB's email dated 12.12.2008
- 3.24 SDEV's memo ref. ( ) in ETWB(W) 545/83/02 dated 6.3.2009
- 3.25 TS/NTE's email dated 13.3.2009
- 3.26 AD(T)'s memo ref. CEDD T 4/5/3/1 dated 26.9.2011
- 3.27 TS/CEO's email dated 2.10.2009 and DEVB's email dated 12.3.2018
- 3.28 DCED's memo ref. CEDD T 4/33/3 Pt.III dated 18.12.2009
- 3.29 SFST's memo ref. 43 in TsyB MA 00/550/1 (C) Pt.2 dated 14.3.2016
- 3.30 TS/HQ's e-Memo ref. (81) in CEDD T 7/4/7 Pt. 33 dated 9.7.2010
- 3.31 FSTB's email dated 15.7.2010
- 3.32 SE/QM&S, HQ's e-Memo dated 13.8.2010
- 3.33 DEVB TCW No. 6/2010: Trip Ticket System for Disposal of Construction & Demolition Materials
- 3.34 SDEV's memos ref. (02FYE-01-11) in DEVB(W) 510/17/01 dated 27.7.2012, (02H25-01-1) in DEVB(W) 510/17/01 dated 8.11.2012 & (02UZT-01-1) in DEVB(W) 510/17/01 dated 28.9.2016
- 3.35 SFST's memo ref. (14) in TsyB T 00/575-1/6/0 dated 26.1.2011
- 3.36 SE/QM&S's e-Memo ref. ( ) in CEDD T 4/36/2/08 dated 4.3.2011 and DoJ's memo ref. L/M (4) in ADV 5054/1C dated 12.2.1998
- 3.37 TS/HQ's email dated 9.11.2011
- 3.38 TS/HQ's email dated 9.1.2012



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- 3.39 TS/HQ's email dated 6.2.2012
- 3.40 ETWB TCW No. 11/2004: Cyber Manual for Greening
- 3.41 ETWB TCW No. 29/2004: Registration of Old and Valuable Trees, and Guidelines for their Preservation
- 3.42 DEVB TCW No. 7/2015: Tree Preservation
- 3.43 DEVB TCW No. 5/2012: Guidelines on the Classification of Works Contract and Service Contract for Procurement
- 3.44 CEDD TC No. 02/2013: Minor Works and Landscape Works Term Contracts
- 3.45 DEVB TCW No. 5/2013: Extension of Time due to Labour Shortage
- 3.46 CEDD TC No. 02/2014 dated 28.1.2014
- 3.47 SDEV's memos ref. ( ) in DEVB(W) 510/10/01 dated 11.2.2014
- 3.48 DEVB TCW No. 7/2014: Guidance on Execution of Public Works Contracts as a Deed
- 3.49 DEVB TCW No. 3/2014: Contractors' Designs and Alternative Designs
- 3.50 SDEV's memo ref. ( ) in DEVB(W) 920/30/01 dated 2.5.2014
- 3.51 SDEV's memo ref. ( ) in DEVB(W) 546/70/03 dated 2.5.2014
- 3.52 DEVB's email dated 16.7.2014 & DEVB's memo ref. (02VKU-01-3) in DEVB(W) 510/17/01 dated 16.12.2016
- 3.53 SDEV's memo ref. ( ) in DEVB(W) 546/84/01 dated 15.7.2015
- 3.54 SDEV's memo ref. ( ) in DEVB(W) 546/84/01 dated 20.8.2014
- 3.55 TS/HQ's email dated 15.10.2014
- 3.56 SFST's memo ref. ( ) in TSyB T 00/575-1/7/0 Pt. 6 dated 28.11.2014
- 3.57 DEVB TCW No. 1/2015: Emission Control of Non-road Mobile Machinery in Capital Works Contracts of Public Works
- 3.58 SDEV's memo ref. ( ) in DEVB(W) 510/10/01 dated 7.7.2015
- 3.59 SDEV's memo ref. ( ) in DEVB(W) 506/30/07 dated 17.2.2016 and 26.5.2017, DEVB TCW Nos. 5/2016, 1/2017 and 2/2017.
- 3.60 SDEV's memo ref. (02URZ-01-5) in DEVB(PS) 108/34 dated 20.12.2016
- 3.61 SDEV's memo ref. ( ) in DEVB(Trg) 133/3(10) dated 23.1.2017
- 3.62 SDEV's memo ref. (02VWV-01-1) in DEVB(W) 510/83/05 dated 24.1.2017
- 3.63 CHE/R&D, HyD's memo ref. (4M9G) in HyD RD/1-95/5 dated 2.2.2017

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Note: These reference documents will be updated as and when necessary by the relevant authority. Reference shall be made to the current or applicable version, as appropriate.

## 4. Definition

4.1 Nil

## 5. Responsibility

5.1 The Office/Branch/Division head is responsible for the implementation of this procedure.

## 6. Procedure

### 6.1 General

6.1.1 Tender documents shall be prepared in accordance with PAH Chapter 5. Tendering shall be carried out, wherever applicable, in accordance with PAH Chapter 6 and the SPR. Reference shall be made to DEVB TCW No. 5/2012 regarding the guidelines on the classification of works contract and service contract for procurement of public works.

6.1.2 Comprehensive lists of reference documents are given in the "References" sections of PAH Chapter 5 and Chapter 6. However, reference shall also be made to the "Information not yet incorporated in the OP" for OP-05 on the IMS Bulletin Board and the latest circulars together with related documents posted on the CEDD Bulletin Board.

6.1.3 For contracts managed by consultants, the procedure prescribed in the respective consultancy agreement, on matters that require consultation with or seeking comment/approval from the Employer, shall also be followed.

6.1.4 All officers involved in preparing tender documentation including tender specifications and assessing tenders must declare whether they have any actual, potential or perceived conflict of interest at the start of deliberation or as soon as they become aware of a potential conflict, in accordance with Chapter 1A of the SPR and paragraph 6.4 of PAH Chapter 6.


6.1.5 For preparation of the tender assessment marking scheme for design and build (D&B) contracts, reference shall be made to DEVB TCW No. 4/2014 regarding the revisions to the specimen tender assessment marking scheme.

6.1.6 Reference shall be made to CEDD TC No. 02/2013 regarding minor works and landscape works term contract.

6.1.7 Reference shall be made to DEVB TCW No. 5/2013 regarding extension of time due to labour shortage.

6.1.8 Reference shall be made to Clause 3.52 of this OP regarding Reimbursement of Contractor's and Sub-contractors Contributions to the Mandatory Provident Fund.

6.1.9 Reference shall be made to DEVB TCW No. 1/2015 regarding the use of non-road mobile machinery in capital works contracts of public works.

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## 6.2 Tender Procedure Check-list

- 6.2.1 The tender procedure checklist in Paragraph 1 of PAH Chapter 6 provides a general list of actions to be taken at various stages of tendering. This list is not exhaustive and the project engineer (PE) shall expand the list, where necessary.
- 6.2.2 For construction contracts with estimated contract sum and term contracts with an estimated value of works in a 12-month period exceeding 5,000,000 Special Drawing Rights, the tender procedure for procurement governed by the Agreement on Government Procurement of the World Trade Organization (GPA WTO) stipulated in Paragraph 3.7 of PAH Chapter 6, DEVB TCW No. 2/2014, Clause 3.50 of this OP and the general requirements on government procurement covered by the "Hong Kong, China – New Zealand Closer Economic Partnership Agreement" in Clause 3.35 of this OP, shall be followed. Attention shall be paid to DoJ's advice given by FSTB in Clause 3.23 of this OP regarding the determining method whether a tender of a mixed nature is to be covered by WTO GPA and Clause 3.36 of this OP regarding the basis for calculating the contract value of a term contract.
- 6.2.3 Reference shall be made to Clause 3.56 of this OP regarding Free Trade Agreement between Hong Kong, China and Chile Government Procurement.


## 6.3 Calling for Tenders

- 6.3.1 The appropriate method of calling for tenders and selection of tender boards shall be determined, wherever applicable, in accordance with Paragraphs 2.1 and 2.2 of PAH Chapter 6, CEDD TC No. 05/2017 and FC No. 3/2009.
- 6.3.2 Guidelines for the timing of tender procedure are provided in Paragraph 2.4 of PAH Chapter 6.
- 6.3.3 For DevOs: If the design certificate has not been issued then tenders shall only be invited with the consent of DPM.
- 6.3.4 The PE must get the pre-tender estimate endorsed by the Pre-tender Estimate Vetting Committee (PTE Vet Com), the CEO Committee on Project Estimates (COPE) and the GEO Committee on Project Estimates (GEO COPE) for DevOs, CEO and GEO respectively. The PTE Vet Com, COPE and GEO COPE shall be chaired by DPM, DH(PEM) and DH(LPM) respectively and attended by CE and PE in charge of the respective contracts. The checklist in Annex 1 shall be used in preparing the pre-tender estimate. Reference shall be made to Clause 3.46 of this OP regarding the establishment of the Departmental Committee on Project Estimates (DCOPE).
- 6.3.5 Prior to invitation to tender, SDEV shall be alerted through Press Secretary to SDEV by the works department on the issue of important works tenders, especially those related to Chief Executive's initiatives in the policy address, via the departmental headquarters. The notification shall be made by including the item in the regular weekly submission for "Forthcoming Events and District Consultation" through TS/Office to SE/CR who shall then report the event in his routine media return.

## 6.4 Prerequisites to Calling for Tenders

### 6.4.1 Availability of Funds

- 6.4.1.1 Funding shall normally be secured before tendering. If it is necessary to initiate the tendering exercise before funding is secured, the procedure stipulated in FC No. 5/2016, ETWB TCW No. 4/2006 and Clause 3.27 of this OP shall be followed.

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## 6.4.2 Tender Documents

6.4.2.1 All tender documents shall be completed prior to calling for tenders. They shall comply with and satisfy the requirements prescribed in Paragraph 3.5 of PAH Chapter 6. Reference shall also be made to Clauses 3.26 of this OP regarding standard libraries and other documents for preparation of tender documents. DEVB's library of standard General Conditions of Tender, Special Conditions of Tender and Notes to Tenderers and library of standard Special Conditions of Contract are posted on the Works Group Intranet Portal with the link as follows:

[http://portal.etwgi.etwb.hksarg/useful\\_information/](http://portal.etwgi.etwb.hksarg/useful_information/)

Subsequent changes to the standard provisions shall also be noted.

6.4.2.2 Paragraph 11.1 of PAH Chapter 5 shall be followed for allocation of a contract number. For CEO, the allocation of contract numbers shall also follow CEO Circular No. 2/2001. For DevOs, the format on the contract numbers and contract titles shall follow CEDD ASG No. 5/2017 and Clause 3.19 of this OP. The contract title shall be agreed by the CE responsible. For GEO, a register is maintained by TS/GEO, and PE shall request contract numbers from him.

6.4.2.3 For any in-house term contract tender document drafted based on sample documents, the additional procedures set out in **Annex 2** shall be followed.

6.4.2.4 For GEO: the procedure set out in Work Instruction No. GEO/LPM-OP-05-WI-01 shall be followed for Landslip Prevention and Mitigation works contracts administered by in-house staff.

6.4.2.5 Reference shall be made to Paragraph 9.27 of PAH Chapter 5 for selection of contracts to adopt non-contractual partnering.

6.4.2.6 Reference shall be made to the guidelines given in Paragraphs 9.11 and 9.32 of PAH Chapter 5 and Clause 3.34 of this OP regarding contract measures for prevention of non-payment of wages and limiting the tiers of sub-contracting.

6.4.2.7 Reference shall be made to ETWB TCW No. 50/2002 for contracts where joint ventures are allowed to tender.


6.4.2.8 Reference shall be made to Paragraphs 7.7, 7.8, 7.9 and 9.15 of PAH Chapter 5, ETWB TCW Nos. 30/2002 and 19/2005, ETWB's Interim Guidance Note dated 19.06.2006 and 22.11.2013, DEVB TCW Nos. 06/2010 and 08/2010 regarding site safety and environmental management.

6.4.2.9 If the project has adopted Systematic Risk Management, reference shall be made to the guidelines given in ETWB TCW No. 6/2005.

6.4.2.10 Reference shall be made to Paragraph 4.3.2 of PAH Chapter 6 regarding DEVB's guidelines for issuing information to prospective contractors in pre-contract stage.

6.4.2.11 Reference shall be made to Paragraph 7.10 of PAH Chapter 5, ETWB TCW Nos. 11/2004 & 29/2004 and DEVB TCW No. 7/2015 regarding preservation and protection of preserved trees and old and valuable trees.

6.4.2.12 Reference shall be made to DEVB TCW No. 3/2014 and Clause 3.51 of this OP regarding Contractors' Designs and Alternative Designs.

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- 6.4.2.13 Reference shall be made to Clause 3.58 of this OP regarding Revised SCC 2.
- 6.4.2.14 Reference shall be made to Clause 3.59 of this OP regarding the adoption of New Engineering Contract Form.
- 6.4.2.15 Reference shall be made to Clause 3.61 of this OP regarding the provision of site uniform for personnel working on public works sites.
- 6.4.2.16 Reference shall be made to Clause 3.62 of this OP regarding SCT 4 – Contractors' Joint Venture.
- 6.4.2.17 Reference shall be made to Clause 3.63 of this OP regarding revision to particular specification for recycled glass in concrete paving units for capital works projects.

## 6.5 Tendering

- 6.5.1 The normal procedure for selection of tenderers, tenderers' eligibility for various types of works (general works, specialist works, term contract works, WTO GPA works), and procedure for inviting tenders are provided in Paragraph 4.1 of PAH Chapter 6. The supply of additional copies of tender/contract drawings in electronic form shall follow Paragraph 8.4 of PAH Chapter 5. For GEO: The tendering procedure for Landslip Prevention and Mitigation works contract administered by in-house staff set out in Work Instruction No. GEO/LPM-OP-05-WI-02 shall also be followed.

- 6.5.2 The procedure for simplified tendering is stipulated in CEDD TC No. 05/2017 and FC No. 3/2009.

### 6.5.3 Single and Restricted Tendering

- 6.5.3.1 The procedure for single and restricted tendering in Paragraph 4.2 of PAH Chapter 6 shall be followed.

### 6.5.4 Prequalified Tendering


- 6.5.4.1 The procedure for prequalified tendering in Paragraph 4.3 of PAH Chapter 6 and DEVB TCW No. 5/2015 shall be followed. Prequalification of tenderers for maintenance works contracts shall follow the requirements in ETWB TCW Nos. 15/99, 15/99A and 15/99B.

## 6.6 Action during Tender Period

- 6.6.1 The pre-tender meeting, if held, shall be conducted in accordance with Paragraphs 5.1 and 5.3 of PAH Chapter 6.
- 6.6.2 The procedure for amendments to tender documents shall be carried out in accordance with Paragraphs 5.2, 5.3, 5.5 and 5.6 of PAH Chapter 6.
- 6.6.3 The extension of tender validity period, if required, shall be handled in accordance with Paragraph 5.8 of PAH Chapter 6.

## 6.7 Examination of and Report on Tenders

- 6.7.1 Matters relating to confidentiality of tenders, opening and listing of tenders and assessment panel are prescribed in Paragraphs 6.1, 6.2 and 6.3 of PAH Chapter 6.

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## 6.7.2 Examination of Tenders and Tender Evaluation

6.7.2.1 The procedure for tender examination and tender evaluation is prescribed in the SPR 365-370, Paragraphs 6.8 and 6.14 of PAH Chapter 6, DEVB TCW Nos. 4/2014 and 8/2014, Clauses 3.29, 3.55 and 3.56 of this OP.

6.7.2.2 Reference shall be made to Clause 3.27 of this OP and Paragraph 6.2 of PAH Chapter 6 regarding the requirement of informing DEVB the prices for the 3 highest combined score tenders within 3 working days after the opening of the tender fees.

6.7.2.3 Reference shall be made to Clause 3.38 of this OP regarding screening out non-conforming tenders in tender evaluation.

6.7.2.4 Reference shall be made to Clause 3.55 of this OP regarding CEDD Tender Committee – Observations on Identification of high / low rates.

## 6.7.3 Matters to be referred to Tenderers

6.7.3.1 Matters relating to non-compliance with the conditions of tender shall be dealt with according to the requirements stipulated in the Appendix to DEVB TCW No. 8/2014. The procedures for matters to be referred to tenderers are prescribed in Paragraph 6.6 of PAH Chapter 6. Reference shall be made to Clause 3.18 of this OP regarding correspondence in the examination of tender prices and rates.

## 6.7.4 Tender negotiations

6.7.4.1 Tender negotiations shall be conducted in accordance with Paragraph 6.17 of PAH Chapter 6, SPR 385, CEDD TC No. 05/2017 and FC No. 3/2009.

## 6.7.5 Tender Report by the Engineer Designate

6.7.5.1 The tender report shall be completed and signed by the Engineer designate for the Contract in accordance with Paragraph 6.18 of PAH Chapter 6, SPR 375, CEDD TC No. 05/2017 and FC No. 3/2009.

6.7.5.2 Reference shall be made to Clause 3.30 of this OP regarding format of recommendation paragraph in tender report.


6.7.5.3 Reference shall be made to Clause 3.37 of this OP regarding tender report recommending tender who has recently received adverse performance report.

6.7.5.4 Reference shall be made to Clause 3.39 of this OP regarding information on "Authority to Call Tenders" and "Conviction Records" in tender report.

6.7.5.5 Reference shall be made to Clause 3.60 of this OP regarding financial vetting before the award of a contract.

## 6.7.6 Endorsement and submission of Tender Reports

6.7.6.1 The procedure for endorsement and submission of tender reports shall be in accordance with Paragraphs 6.19 and 6.20 of PAH Chapter 6, SPR 375, DEVB TCW No. 8/2014, CEDD TC No. 05/2017, FC No. 3/2009 and Clauses 3.24, 3.31 & 3.32 of this OP. The requirements by FSTB in Clause 3.25 of this OP shall be followed. A copy of the tender report shall be provided to CEDD HQ (Attn: AD(T)) urgent by hand and TS/Office, both with the tender report but without the enclosure.

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### **6.7.7 Acceptance of Tender**

6.7.7.1 The checking procedures prior to accepting a tender are prescribed in Paragraph 7.2 of PAH Chapter 6, CEDD TC No. 05/2017 and FC No. 3/2009.

### **6.7.8 Rejection of Tender**

6.7.8.1 The procedure for rejection of tenders shall follow the requirements stipulated in the Appendix to DEVB TCW No. 8/2014 and Paragraph 6.21 of PAH Chapter 6.

### **6.7.9 Handling of complaints**

6.7.9.1 If complaints are received from tenderers about the process of a tender exercise, they shall be handled in accordance with Paragraph 11.2 of PAH Chapter 6 and SPR 160.

### **6.7.10 Reporting of Tendering Performance**

6.7.10.1 The procedure for reporting tendering performance is prescribed in Paragraph 7.7 of PAH Chapter 6.

## **6.8 Execution of the Articles of Agreement**

6.8.1 The procedure and checklist relating to execution of Articles of Agreement and signing of Contract are prescribed in Paragraphs 8 and 9 of PAH Chapter 6.

6.8.2 For DevOs: The CE shall decide on the publicity need of contract signing. The PE shall report tendering performance of all tenderers in accordance with Paragraph 7.7 of PAH Chapter 6. The SCO shall acknowledge, to the Contractor, receipt of documents retained and distribute the signed contract documents and certified true copies in accordance with Paragraph 10 of PAH Chapter 6 and Clause 3.5 of this OP.

6.8.3 Reference shall be made to Clause 3.47 regarding alignment with the new Companies Ordinance (Cap. 622).


6.8.4 Reference shall be made to DEVB TCW No. 7/2014 regarding guidance on execution of public works contracts as a deed.

## **6.9 Cost Data Collection**

6.9.1 Within 3 weeks from the date of award of a contract (i.e. the date of the letter of acceptance), the project engineer shall follow the guideline given in the Contract Rates Database System accessed via the CEDD Information Portal: <https://portal.cedd.hksarg/> to prepare a data file containing the unit rates of major items of the contract for submission to the Planning Unit. The Planning Unit shall input the data file into the Contract Rates Database System. For CEO: CEO Circular No. 5/2001 shall be followed.

## **6.10 Control of Approved Project Estimates**

6.10.1 If the awarded contract prices are significantly lower than the estimated ones included in the Approved Project Estimates (APE), actions should be taken to reduce the APE with reference to Clause 3.28 of this OP.

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## 7. Records

### 7.1 For CEO/GEO:

Record	Responsible Officer	Minimum Retention Period
Tender procedure checklist	Division head	6 years
Unsuccessful tenders	Division head	3 months after contract execution or notification of no tender acceptance (3 years for tenders covered by WTO GPA)
Tender report	Division head	15 years
Other documents and records related to tenders	Division head	12 years
Signed contract documents and drawings	STA, HQ	12 years after completion of contract

### 7.2 For DevOs:

Record	Responsible Officer	Minimum Retention Period	Filing Index
Signed contract documents and drawings	STA, HQ	12 years after completion of contract	By contract number
For prequalification and tender documents in respect of contracts governed by WTO GPA	IR	3 years	By contract number
Other documents and records related to tenders	IR	3 months after execution of contract	By contract number

IR is the officer in charge of General Registry/Technical Registry

## 8. Annex

Annex 1 Checklist of Pre-Tender Estimate

Annex 2 Additional Procedures for the Preparation, Checking and Approval of In-house Contract Tender Documents Based on Sample Documents



# Civil Engineering and Development Department

## Annex 1 - Checklist of Pre-Tender Estimate

File No.

Contract No. \_\_\_\_\_

Contract Title \_\_\_\_\_

Procedures to be Completed	Completion Date
<ul style="list-style-type: none"> <li>(i) Confirm scope of works</li> <li>(ii) Check drawings</li> <li>(iii) Check Particular Specifications</li> <li>(iv) Check Special Conditions of Contract</li> <li>(v) Check Particular Preambles</li> <li>(vi) Check amendments to Standard Method of Measurement</li> <li>(vii) Check estimated Bills of Quantities</li> <li>(viii) Reassess contingency items</li> <li>(ix) Identify and list special conditions in respect of nature of works and uncertain site conditions which may affect the accuracy of the estimate</li> <li>(x) PTE *VetCom/COPE/GEO COPE to endorse the PTE with due consideration given to the following:-               <ul style="list-style-type: none"> <li>(a) make reference to averaged unit rates of works of similar nature</li> <li>(b) adjustment to account for the prevailing market conditions and special site circumstances/requirements</li> <li>(c) the location of the site</li> </ul> </li> </ul>	

\*Delete where appropriate

Note: In checking the BQ, the Project Engineer should pay particular attention to items that are sensitive to quantity variation (e.g. earthworks)

Checked by Project Engineer: \_\_\_\_\_  
(NAME & POST)

\_\_\_\_\_  
(SIGNED)

\_\_\_\_\_  
(Date)

(OP05/Annex 1)

# **Civil Engineering and Development Department**

## **Annex 2 - Additional Procedures for the Preparation, Checking and Approval of In-house Term Contract Tender Documents Based on Sample Documents**

Note: The following procedures apply to the preparation, checking and approval of all CEDD's in-house term contract tender documents, which are prepared based on a Sample Document. These procedures, which are in response to SETW's memo ref. ETWB (CR)(W) 1-160/12 Pt. 1 dd. 11.1.2006, involve consolidation of existing procedures and adoption of recommendations in Item 4.24 of the Audit Commission's Audit Report No. 45, that are relevant to the operation of the department.

### Notation:

**PE:** An engineer, a geotechnical engineer or a professional grade officer of other discipline responsible for drafting the tender documents. If more than one professional officer are involved in the drafting, the Head of Division shall assign one of them as the PE.

**Project SE:** The immediate supervisor of the PE in the project team.

**Sample Document:** A set of the Specification (GS and PS), Method of Measurement and Schedule of Rates commonly used for the type of term contracts concerned, the source of which may either be a set of sample contract documentation approved for use by the project office or an existing term contract document.

### Responsibilities:

The PE shall be responsible for the drafting of the tender documents. If more than one officer are involved in the drafting of the documents, the PE shall be responsible for coordination and checking of the complete draft documents

The Project SE shall be responsible for overseeing the preparation of the tender documents by the PE and carry out checking and review of the tender documents following these procedures.

### Procedures:

1. The Project SE and the PE shall agree on the Sample Document upon which the tender documents of a term contract will be based.

## **Civil Engineering and Development Department**

### **Annex 2 - Additional Procedures for the Preparation, Checking and Approval of In-house Term Contract Tender Documents Based on Sample Documents**

2. During the preparation of draft tender documents, if amendments (additions, omissions or changes) are required to the Sample Document the PE shall highlight such amendments in highlight mode and prepare a summary of changes. The summary of changes shall provide justification for the amendments.
3. The draft tender documents in highlight mode and the summary of changes shall be checked by the Project SE. If the Project SE is not satisfied with the amendments to the Sample Document, he shall resolve the matter with the PE.
4. The draft tender documents in highlight mode and a summary of changes agreed to by the PE and the Project SE shall then be forwarded to the Head of Division for checking and approval. If the Head of Division is not satisfied with the amendments to the Sample Document, he shall resolve the matter with the Project SE and the PE.
5. All tender documents shall be checked against the approved draft tender documents for correctness before they are issued to the tenderers. The Head of Division shall designate either the PE, an Assistant Engineer or a Survey Officer (Quantity) to carry out such checking.
6. Compliance with the above procedures by the officers concerned, shall be properly recorded and documented. A sample checklist is attached at Appendix A to Annex 2.
7. Reasonable time shall be allowed in each checking process referred above.

**Civil Engineering and Development Department**  
**Annex 2 - Additional Procedures for the Preparation,**  
**Checking and Approval of In-house Term Contract**  
**Tender Documents Based on Sample Documents**

**Appendix A - Sample Checklist**

Contract No. \_\_\_\_\_

Title: \_\_\_\_\_

	Action	Completed on	Initial	Remarks
CE/CGE	Assign _____ as the PE for drafting the tender documents			
Project SE and PE	Agree on the Sample Document to be used for the drafting		Project SE _____ PE _____	Specify the documents agreed to be adopted as the Sample Document
PE	Prepare (1) the draft tender documents with amendments highlighted and (2) the summary of changes			
Project SE	I) Check (1) the draft tender documents with amendments highlighted and (2) the summary of changes			
	II) Resolve any issues with the PE and agree the tender documents and the summary of changes before submission to CE/CGE for approval			
CE/CGE	I) Check and approve the tender document and the summary of changes			
	II) Assign _____ as the Checking Officer to keep, print and check all tender documents against the approved draft before issuance to tenderers			
Checking Officer	To keep, print and check all tender documents against the approved draft before issuance to tenderers			

## **Highways Department**

### **HQ/GN/02**

#### **Guidelines for Checking Submissions of Consultants**

##### **1. Background**

As recommended by the Independent Commission Against Corruption (ICAC), the staff of this Department should adopt a consistent approach in performing their duties related to consultant management in order to reduce the chance of disparity of treatment. In this connection, this document provides principles for checking the submissions prepared by the consultants.

##### **2. Definition of Submissions**

Submissions are documents prepared and provided by the consultants during the course of consultancy agreements.

##### **3. Definitions and Extent of Checking**

The extent of checking consultants' submissions shall be divided into four levels, namely none check, face check, spot check and full check. The levels of checking to the submissions would be determined based on their relevance to the scopes of consultancies, importance to the final products, as well as financial implication. They are defined as follows:

###### **3.1 Level 1 - None Check**

No checking should be required for this category of submissions. Items which have no direct relation with the scope of the consultancy or the performance of the consultants should be included in this category. They include but not limited to:

*Business publication*

*Promotion materials*

*Reference materials for other projects*

**3.2 Level 2 - Face Check**

This is a broad but not detailed check (i.e. "on its face" - basically if it looks right, it is right). Items which are related to the scope of the consultancy, but do not require the response of this Department should be included in this category. They include but not limited to:

*Correspondence to other Government Departments or third parties*

*Progress reports*

*Minutes of meeting*

*Survey information*

**3.3 Level 3 - Spot Check**

This is a detailed check on specific areas or items selected by the liaison officer (i.e. a narrow, but detailed check), which should be carried out if a Face Check is considered not adequate. Items which are within the scope of the consultancy, and require the response or comments of this Department should be included in this category. They include but not limited to:

*Implementation programmes*

*Site investigation results and interpretation*

*Impact assessment reports (EIA, TIA, DIA, EM&A Manual, etc.)*

*Design deliverables (Design Memorandum, Geotechnical Design Submission, etc)*

*Design calculations and drawings*

*Reports on implementation strategy, tendering strategy, interface issues, etc*

*Prequalification documents*

*Tender documents & Bills of Quantities;*

*Contract documents;*

*Project presentation materials (Brochure, Fact Sheet, Video/VCD);*

*Operation and Maintenance Manual;*

*Correspondence to Managing Department*

*Technical Notes, Working Group Papers, Recommendations etc.*

### **3.4 Level 4 - Full Check**

This is a complete, detailed check covering the whole of the consultants' works in connection with the specific task. Items which are vital to the quality of products, or necessary for the fulfillment of statutory procedures, or directly related to financial matters should be included in this category. They include but not limited to:

*Gazette plans*

*Tender assessment report*

*Invoices of consultancy fees or reimbursable items*

The levels of checking for the submissions which have not been mentioned in the above lists should be determined by individual project team.

## **4. Implementation and Follow-up**

4.1 The guidelines shall be implemented with immediate effect.

4.2 Should any queries arise from using the guidelines, or any suggestions for enhancement please contact AMR/SM of MWPMO who shall coordinate with relevant office for a reply, or update the guidelines if necessary.



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8 June 2018

Clerk to Public Accounts Committee  
Legislative Council,  
Legislative Council Complex  
1 Legislative Council Road  
Central, Hong Kong

(Attn.: Mr Anthony CHU )

Dear Sirs,

**Public Accounts Committee**

**Consideration of Chapter 8 of the Director of Audit's Report No. 70**

**Sha Tin Section of Route 8**

Thanks for your letter of 31 May 2018. The requested response and information set out in your letter are enclosed at the **Annex**.

Yours faithfully,

(Kelvin K W LO)  
for Director of Highways



c.c.	STH	(Attn.: Ms CHUNG Sui-kei, Judy)
	SDEV	(Attn.: Mr CHAN Fuk-yiu, Victor)
	DCED	(Attn.: Mr LAM Tat-ming, Terence)
	SFST	(Attn.: Ms HSIA Mai-chi, Margaret)
	Director of Audit	(Attn.: Mr TEO Wing-on)

**Public Accounts Committee**

**Consideration of Chapter 8 of the Director of Audit's Report No. 70**

**Sha Tin Section of Route 8**

***(a) reasons for splitting the construction of Sha Tin Section of Route 8 into three works contracts and awarding them to two different consultants;***

The implementation of mega projects is very complicated. Mega projects will normally be implemented under several contracts having regard to the programme and interface requirements of different parts of the project concerned. This will also increase the competitiveness and reduce the overall project risk. If a mega project is implemented under one single contract, the number of eligible tenderers may be reduced thereby reducing the competitiveness and increasing the project cost. Therefore, this split-contract arrangement will give more opportunity to potential tenderers and invite competitive tenders. In addition, from a project risk management perspective, it is appropriate to implement a mega project under several contracts so as to minimize the reliance on the performance of a single contractor and hence reduce the project risk.

Due to the scale of a mega project, some parts of it are required to be completed at an earlier stage so that they can match with other interfacing parts. As such, the construction of Sha Tin Section of Route 8 was implemented under three civil engineering contracts, namely Contracts A, B and C (i.e. Route 8 - Lai Chi Kok Viaduct, Route 8 - Eagle's Nest Tunnel and Associated Works and Route 8 - Sha Tin Heights Tunnel and Approaches) and one traffic control and surveillance system contract, namely Contract D (Route 8 – Traffic Control and Surveillance System).

For consultancies, they usually involve planning, design and construction supervision, especially for mega projects, the consultants should consider the project as a whole in planning and design. Therefore, it is usual to appoint one consultant for one project. Except under special circumstances, for example in this case, as Civil Engineering and Development Department ("CEDD") had other on-going or planned projects interfacing with this project in Sha Tin area at that time, Contract C was entrusted to CEDD under their existing consultancy for implementation of the design and construction supervision work for Contract C.

***(b) regarding the design and construction supervision work of Sha Tin Section of Route 8, please advise:***

- (i) the tendering procedures to award the consultancy contract(s) for Contracts A and B;***
- (ii) the number of consultants which have been invited to submit tender proposals and number of tender proposals received;***
- (iii) the reasons for awarding the contract(s) to Consultant X;***

- (i) An Assessment Panel (“AP”) for the consultant selection exercise of the Consultancy for the project - Route 8 between Cheung Sha Wan and Sha Tin was set up in January 1999 in order to determine the longlist criteria for inviting Expression of Interest (“EOI”), the longlist of consultants and the marking scheme for the shortlist, to establish the marking scheme for technical proposals, and to conduct the assessments etc. The AP comprised representatives from HyD, Transport Department, the then Civil Engineering Department (CED) and Water Supplies Department, and was chaired by an officer at D2 rank of HyD. With reference to the Consultants Services Directory maintained by the then CED and nature of the project works, HyD prepared a longlist of consultants and proposed a marking scheme for shortlisting the consultants for the consideration of the AP. With the AP’s agreement sought on the longlist of consultants and the proposed marking scheme for shortlisting, letters of invitation for EOI in undertaking the Consultancy were sent to the longlisted consultants on 27.1.1999.

Interested consultants submitted EOI proposals for the Consultancy. The AP marked the submitted proposals based on the agreed marking scheme and shortlisted four consultants with proposals having scored the highest marks for the next stage of selection. HyD then sought approval from the Engineering and Associated Consultants Selection Board (“EACSB”) on 18.3.1999 on the four shortlisted consultants, the proposed marking scheme for the Technical Proposals, the proposed parameters for evaluation of Fee Proposals, the proposed payment schedule and a set of proposed additional special conditions of employment for the Consultancy. In seeking approval from the EACSB, the draft Consultancy brief, the AP meeting minutes and assessment results etc. were also submitted.

Upon obtaining the approval of the EACSB, HyD sent letters to the four

shortlisted consultants to invite submission of Technical Proposals to HyD and Fee Proposals to EACSB.

The AP first assessed and gave technical marks to the submitted Technical Proposals according to the approved marking scheme. Upon completion of that assessment, the AP then obtained from the EACSB the Fee Proposals for fee assessment. The consultants' technical marks and fee marks were then combined for assessment, with technical weighting and fee weighting being 80% and 20% for this project respectively. HyD then sought approval from the EACSB on the appointment of the consultant with the highest combined technical and fee score on 2.7.1999. Upon obtaining the approval of the EACSB on 9.7.1999, HyD appointed the consultant for the Consultancy on 13.7.1999.

- (ii) For the Sha Tin Section of Route 8, a longlist of 16 consultants was agreed by the AP. Letters of invitation for EOI in undertaking the Consultancy were sent to these consultants on 27.1.1999. By the deadline for submission on 24.2.1999, seven consultants/joint venture expressed interests in undertaking the Consultancy. Four were shortlisted and subsequently, four Technical and Fee Proposals were received from them.
- (iii) Consultant X had the highest technical marks and the lowest total fee, and hence the highest combined score. Therefore, HyD sought approval from the EACSB for the appointment of Consultant X for the consultancy. Upon obtaining approval of the EACSB on 9.7.1999, HyD awarded the Consultancy to Consultant X on 13.7.1999.

- (c) *with reference to paragraph 2.5 of the Audit Report, the total amount with a breakdown of the claims submitted by Contractor A in respect of Contract A and the sum certified by Consultant X;*

According to the terms of the Contract A, the sum of claims certified by Consultant X under Contract A is \$85.7 million.

The total amount and breakdown of the claims unresolved under Contract A and therefore disputed by Contractor A in the Arbitration A is tabulated as follows:

	<b>Claimed Amount</b>
Varied and additional works	\$587,975,385
Measurement	\$50,711,983
Prolongation Cost	\$122,626,544
Further financial entitlement	\$255,431,900
Total	\$1,016,745,812

This dispute was finally settled through the extra-contractual settlement sum of \$273 million.

*(d) according to paragraph 2.5 and 2.6 of the Audit Report, Contractor A submitted a request for mediation in February 2008, but the mediation was unsuccessful. Eventually, Contractor A served a Notice of Arbitration in June 2009 to refer the claims to arbitration (“Arbitration A”) and the Government engaged a quantum expert and an engineering expert in April and May 2010 to prepare for the arbitration. In this connection, please advise:*

- (i) whether HyD had, before accepting the mediation request, sought legal opinion from the Department of Justice or LAD of the Development Bureau about the feasibility of settling the claim by mediation. If yes, dates the legal opinion sought and details of the legal opinion; if not, why not;*
- (ii) the reasons for not engaging the quantum expert and the engineering expert immediately after the Notice of Arbitration was served in June 2009;*
- (iii) the number of mediators and arbitrators engaged by the Government for the mediation and arbitration with Contractor A, the number of mediation sessions and arbitration sessions held and the expenditure incurred;*
- (iv) whether there are any criteria and procedural guidelines on engaging and selecting mediators and arbitrators to handle contract disputes involving government projects;*
- (v) whether HyD had been informed of the cost incurred for the mediation/arbitration exercise. If yes, when? Has HyD considered in consultation with other departments on whether it should proceed with the mediation/arbitration exercise taking into account the cost incurred;*

- (i) Before accepting Contractor A's request on 5.2.2008 for mediation, HyD obtained legal opinion from Legal Advisory Division (Works) of Development Bureau ("LAD(W)") on 18.2.2008 about the feasibility of settling the claim by mediation. In accordance with the Government's policy of resolving constructions disputes as far as possible by mediation (only resorting to arbitration where the disputes cannot be resolved by way of mediation) and given that mediation was a viable and from time to time successful way of settling construction disputes, LAD(W) supported the proposal of mediation.
- (ii) Consideration was given by LAD(W) as to the engagement of the quantum expert and the engineering expert immediately after the Notice of Arbitration was served on the Government in June 2009. Given the high stake involved, it was imperative that care be taken to select the most suitable candidates. Steps were accordingly taken by LAD(W) for short listing eligible candidates, inviting EOI, considering the proposals submitted by the candidates, conducting interviews with the candidates, internally discussing the choice of appointees, and seeking approval for appointments and financial provisions. The appointments were then confirmed as soon as possible.
- (iii) There were one mediator and one arbitrator in the mediation and arbitration with Contractor A respectively. Four mediation sessions were held in November 2008, January 2009, February 2009 and March 2009 respectively. One arbitration session was held in November and December 2009. According to legal advice, the expenditure incurred in the mediation and the arbitration with Contractor A is confidential and sensitive information, and it is inappropriate to discuss legal costs incurred as it touches on the Government's negotiation and settlement strategy and such discussion would be prejudicial to the handling of future cases.
- (iv) There are guidelines on the engagement and selection of mediators and arbitrators which were followed at the time of conducting the mediation and arbitration with Contractor A.

Generally speaking, selection criteria include expertise and relevant experience in the field, whether there is any potential conflict of interest, performance, availability and whether there are any other current

appointments, proposed fees and/or estimate for the work to be carried out, views of the parties involved including agreement by the contractor bearing in mind that the mediator / arbitrator is to be jointly appointed by the parties in most of the cases.

- (v) HyD had been kept informed of the cost incurred for the mediation and arbitration throughout the proceedings. HyD had consulted with LAD(W) on whether it should proceed with the mediation/arbitration exercise taking into account the cost incurred.



- (e) *according to paragraph 2.7 of the Audit Report, the disputes between HyD and Contractor A on the claims in Arbitration A mainly consisted of two key issues, namely adequacy of the design for viaduct structure and erection, and measurements and valuations of additional or varied works. Please elaborate on the definitions of “additional or varied works” with examples, and provide details of the additional or varied works involved in Arbitration and the relevant costs;*

In accordance with the General Conditions of the Contract, the Engineer shall order any variation to any part of the Works that is necessary for the completion of the Works and have the power to order any variation that for any other reason shall in his opinion be desirable for or to achieve the satisfactory completion and functioning of the Works. Such variations may include:

- (a) additions, omissions, substitutions, alterations, changes in quality, form, character, kind, position, dimension, level or line;
- (b) changes to any sequence, method or timing of construction specified in the Contract; and
- (c) changes to the Site or entrance to and exit from the Site.

In this connection, the Engineer shall issue variation orders (VOs) for additional or varied works which are considered to be necessarily executed by the Contractor for the satisfactory completion of the Works. In other words, the Engineer will instruct the Contractor to carry out the additional works and varied works in the same manner through VOs.

An example in Contract A was a variation order due to additional works issued to Contractor A for construction of an additional concrete buttress below Lai Wan Road Overpass abutment as the actual ground conditions were found different from that assessed in the design stage. Another example was a variation order due to varied works for the enhancement of bridge parapet to comply with HyD's latest requirement on road safety.

The details of additional or varied works involved in Arbitration A are tabulated with the cost incurred as follows:

<b>Types of Varied and Additional Works</b>	<b>Claimed Amount in Arbitration A</b>
1. Viaduct Structure Design and Erection	\$128,477,801
2. Project Design Additional Resources	\$20,819,995
3. Variation Orders	\$438,677,589
Total	\$587,975,385

***(f) with reference to paragraphs 2.9 and 2.18(a) of the Audit Report, please advise:***

- (i) the breakdown of the extra-contractual settlement sum of \$273 million, including the amount of interest;***
- (ii) the basis to support HyD's views that not all the disputes with Contractor A settled under the \$273 million could be attributed to Consultant X;***
- (iii) the basis for HyD's view that the proposed settlement would cost appreciably less and be beneficial to the Government;***

(i) The settlement sum was a global figure and there was no breakdown including interest.

(ii) According to the legal advice, some of the settlement sum paid in settlement of the Contractor A's claims were related to additional or varied works but not the viaduct structure design and erection caused by the performance of Consultant X. Therefore, not all the disputes with Contractor A settled under the \$273 million could be attributed to Consultant X.

(iii) The Government had carried out a detailed assessment of the total risk exposure of the Government regarding the disputes and, based on that, formulated the negotiation strategy. HyD considered that the proposed settlement would cost less and be beneficial to the Government having regard to the assessed total risk exposure mentioned above and the costs in continuing the arbitration proceedings.

(g) *according to Note 13 of paragraph 2.21 of the Audit Report, HyD amended the Structures Design Manual for Highways and Railways in August 2006 setting out guidelines for carrying out appropriate level of independent checking on the design of different categories of new highway structures and the associated modification of existing highway structures by consultants or contractors employed by the Government. In this connection, please advise:*

- (i) *a copy of the extracts of the amended part(s) of the Manual;*
- (ii) *how to define the “appropriate level of independent checking on the design of highway structures” with examples;*
- (iii) *the number of cases in which the independent checking had revealed irregularities;*

(i) A copy of the extracts of the amended part of the Manual is attached at **Appendix A**.

(ii) The independent checking would be conducted by a Checking Engineer appropriate to its Category. There are 3 categories of highway structures requiring checking by Checking Engineers. For Category I, the Checking Engineer shall be a qualified professional in the same organization who may be from the same design team. For Category II, the Checking Engineer shall be a qualified professional or checking team in the same organization but shall be independent of the design team. For Category III, the Checking Engineer shall be a checking team from a separate independent organization. The Classification of Highway Structures for checking is tabulated as follows:

Structure Category	Description
I	<p>Simple Structures</p> <p>Structures which contain no departures from or aspects not covered by current standards adopted by Highways Department, and which are either :</p> <ul style="list-style-type: none"> <li>a) Single simply supported span of less than 20m and having less than 25° skew;</li> <li>b) Buried concrete box type structures with less than 8m span;</li> </ul>

	c) Retaining walls with a retained height of less than 7m; or d) Noise barrier with a maximum height of 3m.
II	Intermediate Structures  Structures not within the parameters of Structure Categories I and III.
III	Complex Structures  Structures requiring sophisticated analysis or with any one of the following features:  a) High structural redundancy; b) Unconventional design aspects; c) Any span exceeding 80m; d) Skew exceeding 45°; e) Continuous structure with spans exceeding 65m; f) Difficult foundation problems; or g) Difficult construction techniques/ problems.

(iii) No irregularity has been identified in the independent checking in HyD since the promulgation of the requirement in 2006.

***(h) with reference to paragraphs 2.25 and 2.27 of the Audit Report, please advise the improvement measures taken/to be taken with the implementation timeline for the followings:***

- (i) vetting of consultants' designs and handling of responses to tender queries;***
- (ii) the Administration's "check the checker" role in monitoring the implementation of government projects by consultants and contractors, such as the design and drawings produced by consultants and contractors;***

- (i) HyD had already reminded its staff and consultants in May 2018 to continue to strictly follow the guidelines stipulated in the Structures Design Manual for Highways and Railways ("SDM").

For responses to tender queries, HyD would review and update, if necessary, the document entitled "HQ/GN/02 Guidelines for Checking Submissions of Consultants" ("HQ/GN/02") to incorporate principles for checking the responses to tender queries prepared by the consultants. HyD will also continue to ask its staff and consultants to strictly comply with the requirements for handling tender queries including those to be enhanced in the Project Administration Handbook for Civil Engineering Works.

- (ii) The project office shall arrange with the designer the checking of a highway structure by a Checking Engineer appropriate to the category as defined in SDM.

When the Checking Engineer has completed the design checking including the design calculations, specifications, drawings etc., the designer and the Checking Engineer shall sign the Highway Structures Design and Check Certificate as per the standard form appended in SDM or as per other form as agreed with the Chief Highway Engineer/Bridges and Structures (CHE/B&S). Notwithstanding the design checking in accordance with SDM, CHE/B&S will spot check the proposed structural form aspects of the design and drawings in accordance with HQ/GN/02.

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- (i) ***with reference to paragraphs 2.31 and 2.32 of the Audit Report, please advise the reasons for HyD not seeking prior agreement from the Financial Services and the Treasury Bureau (“FSTB”) to the strategy or bottom line for negotiation before discussing and reaching a consensus with Contractor A;***

In December 2010, HyD had sought and obtained the FSTB’s prior agreement to a strategy and bottom line for proceedings in Arbitration A.

While pending the FSTB’s agreement to a revised strategy and bottom line for proceedings in Arbitration A submitted by HyD in June 2012, Contractor A approached HyD in July 2012 to explore the possibility of settling the disputes without continuing the arbitration proceedings on a without prejudice basis. In considering that by early settling the disputes, both parties including the Government would be benefited by saving the huge costs in continuing with the arbitration, HyD thus agreed to discuss with Contractor A with an attempt to settle the disputes on a without prejudice basis as early as possible.

After several meetings, both parties in end July 2012 reached a non-committal consensus (which was subject to the Government’s internal approval and the execution of a formal settlement agreement) to settle all the disputes under Contract A at a settlement sum of \$273 million on a “no admission of liability” basis.

Upon obtaining Government’s internal approval on 11.10.2012, HyD and Contractor A executed the settlement agreement on 24.10.2012.

- (j) *except the extra-contractual settlement sum of \$133.1 million, any other actions taken against the unsatisfactory performance of Consultant X and whether any sanction system is in place for banning the relevant consultant from bidding consultancy contracts under HyD or other government departments for a limited period of time. If yes, the details; if not, why not.*

HyD manages the consultants according to Handbook on Selection, Appointment and Administration of Engineering and Associated Consultants and Works Technical Circular of Development Bureau Nos. 3/2016 - Management of Consultants' Performance. HyD will report consultants' performance regularly and take regulating actions (such as suspension from bidding for new consultancies) against poor performers.

As Contract A involved complicated technical and legal issues and the arbitration with Consultant X was in progress, the performance of Consultant X in the relevant design and response to tender queries issues could only be considered based on the result of the arbitration. Subsequently, the disputes with Consultant X were settled on a "without admission of liability" basis, avoiding further proceeding of arbitration.

In light of the recovery, through the ex-contractual settlement, of the amount from the Consultant X to settle the disputes being on a "without admission of liability" basis, the disputes on the performance of Consultant X in the relevant design and response to tender queries issues could not be ascertained.



# STRUCTURES DESIGN MANUAL

*for Highways and Railways*

Third Edition



HIGHWAYS DEPARTMENT

*The Government of the Hong Kong  
Special Administrative Region*



© The Government of the Hong Kong Special Administrative Region  
First edition, August 1993.  
Second edition, November 1997.  
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## FOREWORD

The Structures Design Manual for Highways and Railways sets out standards and provides guidance for the design of highway and railway structures in Hong Kong. The Manual was first published in August 1993 with its second edition released in November 1997. It has been widely used as a reference for highway and railway structural works by practitioners.

The third edition incorporates a new Chapter 19 on Design Checking. It also includes revisions to Wind Loading Design in Chapter 2, Parapet Design in Chapter 15 and Aesthetics in Chapter 17 which are based on recent studies, as well as minor amendments as a result of new research information, refinements in design methods and feedbacks on the previous editions.

The Bridges and Structures Division of Highways Department will regularly review and improve on the content of this Manual so that all design standards and guidance will be in line with the most up-to-date practice. We welcome any comments on this Manual for further improvements.

A handwritten signature in black ink, appearing to read 'MAK Chai-kwong', with a stylized flourish at the end.

( MAK Chai-kwong )  
Director of Highways

## **CHAPTER 19. DESIGN CHECKING**

### **19.1 GENERAL**

This chapter sets out the guidelines for carrying out independent checking on the design of new highway structures and the associated modification of existing highway structures by consultants or contractors employed by the government. The design checking stipulated below shall also apply to public highway structures which are designed by public organizations (other than the government), private organizations or their agents. These guidelines do not modify the contractual or legal responsibilities of any party for the work carried out including without limitation the Designer and Checking Engineers as defined in Clause 19.2.

### **19.2 TERMINOLOGY**

The terms adopted in this chapter are defined as follows :

Project Office	The office in charge of the project or the developer in the case of a private development.
Designer	The professional, the team of professionals, the company or the organization being responsible for the design.
Checking Engineer	The professional, the team of professionals, the company or the organization separate from the Designer being responsible for the independent check of the design.

### **19.3 OBJECTIVE**

The objective of the independent checking is to ensure :

- (a) compliance of the design with the Project Office's requirements, relevant design standards and statutory requirements;
- (b) validity of design concepts, methods and assumptions;
- (c) applicability, accuracy and validity of the computer programs and models used in the design;
- (d) accurate translation of the design into drawings and specifications; and
- (e) practicality and adequacy of key details.

## **19.4 CLASSIFICATION OF HIGHWAY STRUCTURES**

For design checking purpose, all highway structures shall be classified into Categories I, II and III as shown in Table 41. This classification is not rigid and each case shall be decided on its merits having regard to the cost, complexity, safety, durability and consequences of failure. The Designer shall determine and agree with the Project Office the proposed Category for the highway structures being designed. If necessary, the Project Office or the Designer may approach the Chief Highway Engineer/Bridges and Structures for advice and/or decision on any matters relating to this classification.

The Project Office shall arrange with the Designer the checking of a highway structure by a Checking Engineer appropriate to its Category. The Category shall be identified early. As the design evolves, the Designer shall ensure the structure is appropriately classified and seek the agreement of the Project Office to amend its Category and checking arrangements when necessary.

## **19.5 CHECKING ENGINEER**

The requirements of the Checking Engineer in each category of highway structures are outlined below :

- (a) For Category I structures, an independent check shall be carried out by a qualified professional in the same organization as the Designer who may be from the same design team.
- (b) For Category II structures, an independent check shall be carried out by a checking team in the same organization as the Designer but shall be independent of the design team.
- (c) For Category III structures, an independent check shall be carried out by a checking team from a separate independent organization.

For Categories II and III structures, the Checking Engineer shall be strictly excluded from having direct involvement in the design of the concerned project. In all cases, the Checking Engineer must have sufficient knowledge and experience relating to the type of structures to be checked. The Checking Engineer proposed or appointed by the Designer shall be approved by the Project Office in advance. The Checking Engineer shall exercise reasonable and professional skill, care and diligence at all times in the design checking and that the safety and integrity of the structures shall not be compromised in any way.

Should the Project Office be dissatisfied with the Checking Engineer at any time, the Project Office may, having given reasonable notice of dissatisfaction, order the dismissal and replacement of the Checking Engineer.

## **19.6 COMMENT BY THE CHIEF HIGHWAY ENGINEER / BRIDGES AND STRUCTURES**

For Category III structures, the Designer shall at the commencement of the design



forward his design approach statement including design concept, design philosophy and outline of mathematical modelling of the structure to the Chief Highway Engineer/Bridges and Structures for comments and make a presentation if required. The Designer shall take account of the Chief Highway Engineer/Bridges and Structures' comments in his design.

The comment by the Chief Highway Engineer/Bridges and Structures will be provided from the viewpoint of design standards and for public interest. It will not relieve the responsibility of the Designer or the Checking Engineer in any way.

## **19.7 CHECKING PROCESS**

Irrespective of the Category of structures, all design calculations, drawings and specifications shall first be self-checked by the Designer prior to the checking by the Checking Engineer. Also, any computer programs including those developed in-house and spreadsheet applications used in the structural analysis shall be verified and validated by an appropriate method, and the Designer shall be responsible for such verification and validation.

It is a good practice to start the design checking as early as possible so that the design and checking can proceed together. Also, any disagreements or points of differences can be resolved earlier as the design progresses.

Table 42 gives details of the design checking required for each Category of highway structures.

The independent design checking for Category III structures shall be carried out without reference to the design calculations. It is incumbent upon the Checking Engineer to establish the validity of the design assumptions independently. The Checking Engineer would require documents including the design memorandum/manual, drawings, specifications, ground investigation results and other relevant design information for him to carry out the checking. The design memorandum shall contain sufficient information detailing the assumptions made in the design to enable the Checking Engineer to carry out his own independent analysis and assessment and to make direct comparison between his own results and the Designer's design. Major difference in design assumptions should be brought to the attention of the Designer. Although the methods of analysis need not be the same, the Designer and the Checking Engineer should consult with each other to ensure that their calculated results are comparable.

In the event that the design checking reveals errors, omissions or ambiguities in the design, the Checking Engineer shall inform the Designer who shall in turn seek agreement with the Checking Engineer on the course of action required to rectify the design deficiency. The Designer shall make all necessary changes to the design and associated documents, and re-submit them to the Checking Engineer for further review and agreement.

Should the Designer disagree with the Checking Engineer's view, he shall promptly refer the case to the Project Office. Where necessary, advice from an independent expert or the Chief Highway Engineer/Bridges and Structures may be sought.

It must be emphasized that an independent check shall not in any way absolve the Designer from his responsibility and liability for the proper design of highway structures. The

independent checking procedures stipulated herein are additional to any in-house design checking by the Designer.

## **19.8 HIGHWAY STRUCTURES DESIGN AND CHECK CERTIFICATE**

When the design checking has been completed and all necessary amendments to the design calculations, specifications and drawings have been made and checked by the Checking Engineer, the Designer and the Checking Engineer shall sign the Highway Structures Design and Check Certificate as per the standard form appended in Table 43 or as per other form as agreed with the Chief Highway Engineer/Bridges and Structures. Unless there are justifiable reasons acceptable to the Project Office, the Designer shall exercise every effort to ensure that no drawings shall be issued for tendering or construction until the Highway Structures Design and Check Certificate has been accepted by the Project Office.

For Category III structures, a full set of the design submissions and the Highway Structures Design and Check Certificate shall be submitted to the Chief Highway Engineer/Bridges and Structures for audit and record purpose before construction commences. Should the Designer or the Project Office have any difficulties to comply with this requirement under exceptional circumstances, they should seek the special agreement from the Chief Highway Engineer/Bridges and Structures.

For all categories of structures, any amendments to the design deemed necessary which have structural implications following the issue of the Highway Structures Design and Check Certificate shall be checked and certified by an appropriate Checking Engineer. The Designer shall notify the Chief Highway Engineer/Bridges and Structures in case such amendments deviate significantly from the original design intent.

An alternative design by a contractor shall also be subject to design checking if it is to be implemented.

Table 41 - Classification of Highway Structures

Category	Description
I	<p style="text-align: center;"><u>Simple Structures</u></p> <p>Structures which contain no departures from or aspects not covered by current standards adopted by Highways Department, and which are either</p> <ul style="list-style-type: none"> <li>a) Single simply supported span of less than 20m and having less than 25° skew</li> <li>b) Buried concrete box type structures with less than 8 m span</li> <li>c) Retaining walls with a retained height of less than 7 m, or</li> <li>d) Noise barrier with a maximum height of 3 m.</li> </ul>
II	<p style="text-align: center;"><u>Intermediate Structures</u></p> <p>Structures not within the parameters of Categories I and III.</p>
III	<p style="text-align: center;"><u>Complex Structures</u></p> <p>Structures requiring sophisticated analysis or with any one of the following features :</p> <ul style="list-style-type: none"> <li>a) High structural redundancy,</li> <li>b) Unconventional design aspects,</li> <li>c) Any span exceeding 80 m,</li> <li>d) Skew exceeding 45 °,</li> <li>e) Continuous structure with spans exceeding 65 m,</li> <li>f) Difficult foundation problems, or</li> <li>g) Difficult construction techniques/ problems.</li> </ul>



Table 42 - Scope of Design Checking

Category	Scope of Design Checking
I	<ul style="list-style-type: none"> <li>a) Check compliance with design codes and standards.</li> <li>b) Carry out arithmetic check on the design calculations.</li> <li>c) Carry out spot checks on critical structural elements. Repetition of numerical calculations is not required if the Checking Engineer can validate the structural adequacy by alternative method or comparison with other similar completed structures.</li> <li>d) Ensure that the design is correctly translated into the drawings and specifications.</li> </ul>
II	<ul style="list-style-type: none"> <li>a) Carry out comprehensive check on drawings with reference to the design calculations. The check will include but not be limited to the design concept, the compliance with design code and standards, the derivation of loadings, method of analysis and design assumptions, the structural adequacy of individual structural elements, stability of the structures and sequence of construction.</li> <li>b) Check/Confirm the applicability, accuracy and validity of all computer programs used by the Designer.</li> <li>c) Check the numerical model, its applicability, input parameters and boundary conditions.</li> <li>d) Carry out separate analytical check on critical structural elements without reference to the design calculations.</li> <li>e) Ensure that the design is correctly translated into the drawings and specifications.</li> </ul>
III	<ul style="list-style-type: none"> <li>a) Derive all loading, design concept, criteria, assumptions and parameters, and sequence of construction from the design document i.e. drawings, design memorandum, specifications, site investigation records, etc.</li> <li>b) Check the compliance with design codes and standards, and limitations if any.</li> <li>c) Check the applicability, accuracy and validity of all computer programs used in design checking.</li> <li>d) Construct computer models, input boundary conditions and parameters and carry out independent structural analysis.</li> <li>e) Prepare an independent set of design check calculations.</li> <li>f) Ensure that the design is correctly translated into the drawings and specifications.</li> </ul>

Table 43 - Highway Structures Design and Check Certificate

HIGHWAY STRUCTURES DESIGN AND CHECK CERTIFICATE	
Agreement No. :	_____ (if appropriate)
Project Title :	_____
Project Office :	_____
<p>1. This Design and Check Certificate refers to submission No. _____ which comprises</p> <p>(a) <u>Highway structures covered by this Certificate</u> (<i>nature and description of the submission</i>)</p> <p>_____</p> <p>_____</p> <p>in respect of : (<i>description of the highways structures to which the submission refers</i>)</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>(b) Contents of this submission are listed in Schedule A below.</p>	
<p>2. Designer's certification</p> <p>I / We certify that</p> <p>(a) the design of the highway structures, as illustrated and described in the documents listed in Schedule A below, complies with the standards set out in the Agreement or _____ (any form of agreement as appropriate) and with amendments agreed to by the Director's Representative or _____ (any relevant authorities as appropriate);</p> <p>(b) all reasonable and professional skill, care and diligence have been exercised in designing the highway structures, as illustrated and described in the documents listed in Schedule A below; and</p> <p>(c) a self-check has been undertaken and completed to confirm the completeness, adequacy and validity of the design of the highway structures as illustrated and described in documents listed in Schedule A below.</p>	
<p>Signed : _____</p> <p>_____ (Name)</p> <p>_____ (Position)</p> <p>_____ (Organization)</p> <p>_____ (Date)</p>	

Table 43 - Highway Structures Design and Check Certificate (Cont'd)

3. Checking Engineer's certification

- (a) I / We certify that the design has been independently checked in accordance with the Structures Design Manual for Highways and Railways using all reasonable skill and care and that I/we am/are satisfied that the design checked complies in all respects with the agreed design criteria.
- (b) I / We further certify that I am/are satisfied that the checking of the above design is completed.

Signed : \_\_\_\_\_  
 \_\_\_\_\_ (Name)  
 \_\_\_\_\_ (Position)  
 \_\_\_\_\_ (Organization)  
 \_\_\_\_\_ (Date)

**Schedule A**

Submission No. \_\_\_\_\_ comprises the followings :

Documents : *(Title, reference number and revision)*

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Drawings : *(Title, drawing number and revision)*

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Others : *(Please Specify)*

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財經事務及庫務局



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**FINANCIAL SERVICES AND THE  
TREASURY BUREAU**

24/F, Central Government Offices,  
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本函檔號 Our Ref. : TsyB W 00/520-1/37  
來函檔號 Your Ref. : CB4/PAC/R70

8 June 2018

Mr Anthony Chu  
Clerk to Public Accounts Committee  
Legislative Council Secretariat  
Legislative Council Complex  
1 Legislative Council Road  
Central, Hong Kong

Dear Mr Chu,

**Public Accounts Committee  
Chapter 8 of Director of Audit's Report No. 70  
Sha Tin Section of Route 8**

We refer to your letter of 31 May 2018.

The supplementary information requested under Part V of the follow-up action list is set out at **Enclosure** please.

Yours sincerely,



(Margaret Hsia )  
for Secretary for Financial Services  
and the Treasury

**Part (V) – For the Financial Services and the Treasury Bureau**

**(a) with reference to paragraphs 2.31 and 2.32 of the Audit Report, please advise –**

**(i) the reasons for FSTB spending four months to approve the settlement of the disputes under Contract A.**

Financial Services and the Treasury Bureau (FSTB) exercises due diligence and considers every application for proposed settlement of disputes very carefully. The process often involves seeking clarifications and additional information from concerned bureaux and departments. If there is a practical need to decide on an application by a specified deadline, FSTB makes its best endeavor to meet the deadline. In the current case, Highways Department (HyD) sought approval by memo on 21 June 2012 for increasing the amount of payment-into-court related to the disputes on Contract A. On receiving the application, FSTB immediately started a dialogue with HyD even though no deadline was set. FSTB then followed up in writing to formally seek supplementary information from HyD on 6 July 2012. HyD responded to FSTB on 7 August 2012. Shortly after that, HyD requested in writing on 10 August 2012 for FSTB to suspend processing the subject application.

On 24 August 2012, HyD submitted a paper seeking FSTB's approval for the proposed settlement sum after reaching a non-committal consensus with Contractor A. FSTB subsequently sought further information from HyD on 21, 24 and 25 September 2012, to which HyD gave a consolidated reply on 26 September 2012. After HyD responded on 5 October 2012 to further enquiries made by FSTB on 4 October 2012, FSTB approved the proposed settlement sum on 11 October 2012.

- (ii) the basis for FSTB approving the settlement of the disputes under Contract A;**
- (iii) actions that would have been taken if FSTB did not support the settlement or the proposed settlement figure agreed between HyD and Contract[or] A.**

In general, FSTB takes into account the legal advice obtained and satisfies itself that a settlement proposal can best safeguard the overall interest of the Government in terms of cost, programme implication, potential liability, risk exposure, and other public interest considerations before approving any settlement proposal. These are also the bases on which FSTB approved the proposed settlement of the disputes under Contract A.

Had FSTB had reservation over the proposed settlement package agreed between HyD and Contractor A on a non-committal basis, it would have set out its observations and concerns, and invited HyD to review and resubmit its proposal as appropriate for further consideration and approval.

- (b) **for projects which were completed within the original Approved Project Estimates yet substantial amount was paid out by the Administration as claims to contractors for additional/varied works or for any other reasons, whether the Administration would consider setting up a reporting mechanism to the Legislative Council on details of these cases.**

The Development Bureau will coordinate with concerned bureaux and departments in providing a written reply to the PAC separately on this suggestion.

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電話 Tel No.: 3509 8279

本局檔號 Our Ref.: DEVB(CR)(W)1-160/77

傳真 Fax No.: 2513 5608

來函檔號 Your Ref.: CB4/PAC/R70

8 June 2018

Clerk to the Public Accounts Committee  
Legislative Council  
Legislative Council Complex  
1 Legislative Council Road  
Central, Hong Kong  
(Attn.: Mr Anthony CHU)

**By Email**  
**(ahychu@legco.gov.hk)**

Dear Mr CHU,

### **Public Accounts Committee**

### **Consideration of Chapter 8 of the Director of Audit's Report No. 70**

### **Sha Tin Section of Route 8**

Thank you for your letter dated 31 May 2018 requesting response / information to facilitate the Public Accounts Committee's consideration of the above chapter. Please find our reply below:

- (a) The organization chart of the Legal Advisory Division (Works) ("LAD"), including the rank of counsels and their duties;

During the period of offering legal advice for Contract A in 2012, there were 15 Government Counsel grade officers in the Legal Advisory Division (Works) ("LAD(W)"), comprising one Principal Government Counsel ("PGC"), two Deputy Principal Government Counsel ("DPGC"), one Assistant Principal Government Counsel ("APGC"), ten Senior Government Counsel ("SGC") and one Government Counsel ("GC").

The SGC and GC were divided into two teams. Team 1 (comprising 5 SGC and 1 GC) mainly handled the legal aspects of contentious construction cases. It also gave legal advice on other claim-related construction issues. Team 2 (comprising 5 SGC) mainly handled non-contentious matters such as the drafting and vetting of Government

construction contracts and related documents (e.g. tenders). It also gave legal advice on matters relating to construction and other matters falling within the works policy purview of the Works Branch of the Development Bureau.

A copy of the organisational chart of the LAD(W) as at 2012 is attached.

- (b) According to Note 13 of paragraph 2.21 of the Audit Report, the Highways Department (“HyD”) amended the Structures Design Manual for Highways and Railways in August 2006 setting out guidelines for carrying out appropriate level of independent checking on the design of different categories of new highway structures and the associated modification of existing highway structures by consultants or contractors employed by the Government. Whether such independent checking would be extended to all major public works;

Under the current mechanism, independent checking of the design at an appropriate level is normally required for major structures of different public works projects according to their nature, complexity and importance. With the relevant works departments, we will conduct a review to align and/or update the levels of such independent design checks to take into account the latest development in construction technology.

- (c) Measures taken/to be taken to better protect the Administration’s interests in contracting with consultants/contractors for major public works contracts in future;

Construction contracting is never an easy task. One of the difficult areas is the careful apportioning of risks between the contracting parties to deal with unforeseen circumstances that may happen during the execution of the contract. If we simply put all the risks on the consultants/contractors, it would end up with a very high contract price as the consultants/contractors will likely make a conservative assumption in formulating their pricing strategies. To strike a balance, we have to allow the consultants/contractors to submit claims to compensate their losses in the event that certain unforeseen circumstances are encountered.

Shifting from the traditional form of engineering contracts, in recent years, the Development Bureau has been advocating “collaborative partnership” in the implementation of public works projects, including the adoption of the “New Engineering Contract” (NEC) form to enhance management efficiency and cost effectiveness.

The NEC is a suite of contracts developed by the Institution of Civil Engineers in the United Kingdom. It encompasses contract provisions



to encourage contracting parties to adopt a partnering approach to take forward construction works, thereby avoiding or minimising disputes. This contract form attaches great importance to risk mitigation and management and embraces a collaborative risk management mechanism, which helps further reduce project risks. Under the NEC form of contracts, contracting parties are required to give early warnings on any risks that could increase project costs and/or cause any delay as soon as the risks arise. The parties should then work together to address such risks in a collaborative manner through attending meetings to determine the appropriate measures to deal with and mitigate the risks. In this way, the NEC form can help improve the performance of construction contracts in terms of cost and time control.

The NEC form includes, among other things, target cost options which are more suitable for relatively large-scale and complex projects. A pain/gain share mechanism is built into such options to deal with any budget overrun/cost saving as compared with the final target cost, thereby setting a common objective between the contracting parties to enhance project management and tighten cost control. With this mechanism, contractors have the incentive to proactively propose more innovative and cost-effective construction proposals so as to lower the cost and/or complete the works earlier.

Thus, the adoption of NEC form in public works projects will help protect the Government's interest in the contracts with consultants/contractors.

- (d) For projects which were completed within the original Approved Project Estimates yet substantial amount was paid out by the Administration as claims to contractors for additional/varied works or for any other reasons, whether the Administration would consider setting up a reporting mechanism to the Legislative Council on details of these cases.

Details of claims for additional/varied works submitted by contractors under public works contracts normally contain commercially sensitive information, the public disclosure of which might harm the competitive or financial positions of the contractors and can result in the Government's breach of its obligation not to divulge information as provided in the contracts. Such disclosure might also prejudice the Government's position in defending against other similar claims in possible future legal proceedings. The reporting of claims in public works contracts to the Legislative Council (LegCo) would potentially give rise to the above concerns.

Currently, there is a check-and-balance mechanism in place for vetting and approving contract variations as well as certifying contract claims. Works departments are required to follow and comply with relevant

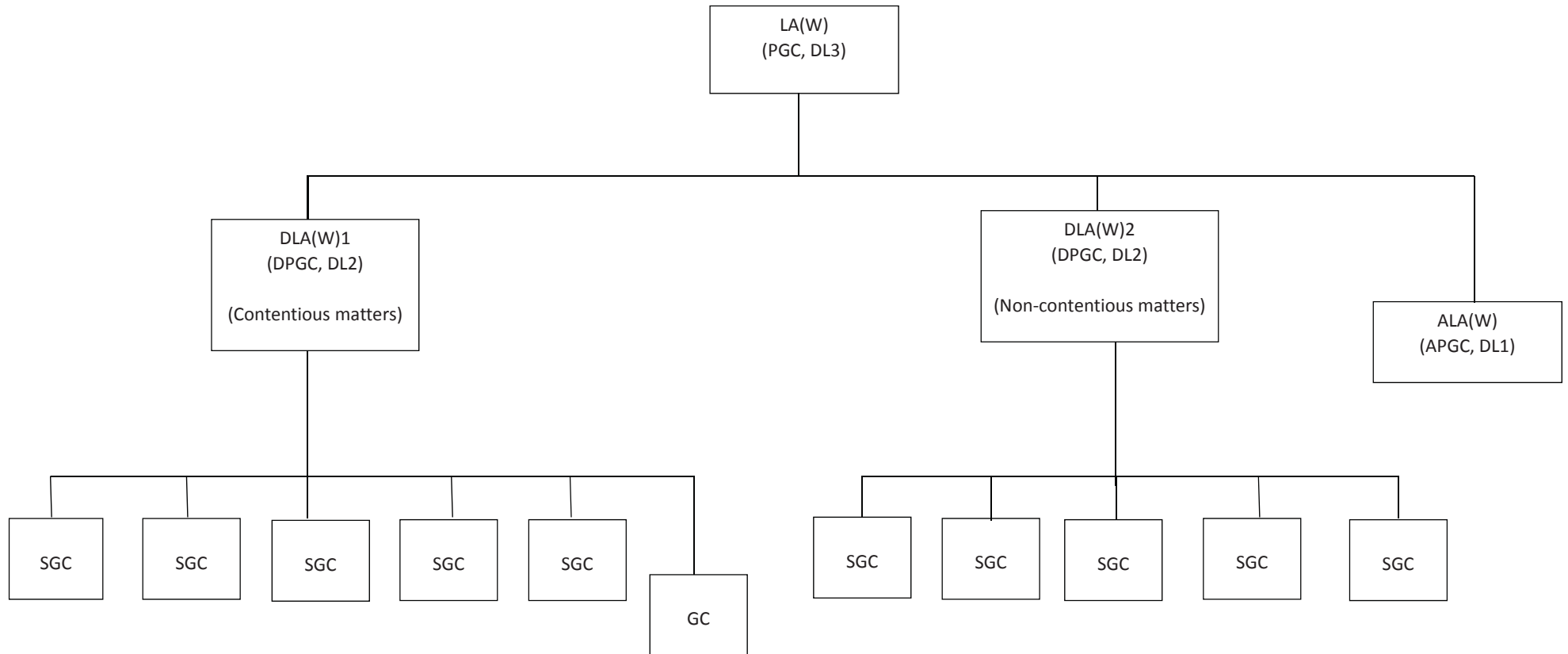
provisions of works contracts and other prevailing Government guidelines/requirements, including the Stores and Procurement Regulations, and seek approval from the relevant internal delegated authorities in issuing contract variations and certifying claims even if the Approved Project Estimates of the projects are not exceeded. Furthermore, approved contract variations and certified claims will be copied to the Audit Commission for information. If the situation warrants, the Audit Commission will conduct audits and where necessary report the cases to the Public Accounts Committee of the LegCo. We consider that the present mechanism of reporting contract variations and claim settlements to the Audit Commission has been working well. That said, we will continue to closely monitor the situation and where necessary carry out review to explore any room for further tightening the control on issuing of contract variations.

Yours sincerely,

  
(Francis L. K. LEUNG)  
for Secretary for Development

c.c. Secretary for Transport and Housing  
Secretary for Financial Services & the Treasury  
Director of Highways  
Director of Civil Engineering and Development  
Commissioner for Transport  
Director of Architectural Services  
Director of Electrical and Mechanical Services

## Legal Advisory Division (Works)





**HIGHWAYS DEPARTMENT  
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來函檔號 Your Ref. : CB4/PAC/R70  
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10 August 2018

Clerk to Public Accounts Committee  
Legislative Council,  
Legislative Council Complex  
1 Legislative Council Road  
Central, Hong Kong

(Attn.: Mr Anthony CHU )

Dear Sirs,

**Public Accounts Committee**

**Consideration of Chapter 8 of the Director of Audit's Report No. 70**

**Sha Tin Section of Route 8**

Thanks for your letter of 24 July 2018. The requested response and information set out in your letter are enclosed at the **Annex**.

Please note that Appendices C, D and E of the Annex should be restricted to Public Accounts Committee's reference only and not be disclosed to the public.

Yours faithfully,

(Kelvin K W LO)  
for Director of Highways

c.c. STH  
SDEV  
DCED  
SFST  
Director of Audit

(Attn.: Ms CHUNG Sui-kei, Judy)  
(Attn.: Mr CHAN Fuk-yiu, Victor)  
(Attn.: Mr LAM Tat-ming, Terence)  
(Attn.: Ms HSIA Mai-chi, Margaret)  
(Attn.: Mr TEO Wing-on)



ISO 9001 : 2008  
Certificate No.: CC 1881



ISO 14001 : 2004  
Certificate No.: CC 2634

**Public Accounts Committee**  
**Consideration of Chapter 8 of the Director of Audit's Report No. 70**

**Sha Tin Section of Route 8**

**Contract B**

- (a) how many tender proposals had been received for the tender for Contract B? whether Contractor B submitted the lowest bid price? If yes, what was the second lowest bid price? If no, what was the lowest bid price?***

In accordance with the tendering procedure stipulated in the Stores and Procurement Regulations ("SPR") 370(c), normally, the tender which attains the highest overall score (technical and price) under the marking scheme should be recommended for Central Tender Board ("CTB")'s approval of the contract award. In the tender for Contract B, seven tender proposals had been received. The bid price submitted by Contractor B was the second lowest one, whereas the lowest bid price was \$1,782.2 million. Nevertheless, the tender proposal submitted by Contractor B attained the highest overall mark and hence was recommended to the CTB in accordance with the SPR 370(c). The CTB approved the award of Contract B to Contractor B on 19 September 2003.

*(b) according to paragraph 3.9 of the Audit Report, the Audit Commission noted that there was a discrepancy in the thickness of smoothing shotcrete requirement between the contract clause (i.e. 100 mm at maximum) and the contract drawing (i.e. 170 mm), and the 170 mm smoothing shotcrete was omitted in the Bills of Quantity ("BQ"). Eventually, the Highways Department ("HyD") paid \$43.7 million to Contractor B for the works item omitted in BQ. Please provide/advise:*

*(i) an extract of the relevant part of the tender documents in relating to the thickness of the smoothing shotcrete requirements;*

*(ii) whether HyD had examined all documents, designs and drawings prepared by Consultant X under Contract B in accordance with HyD's "Guidelines for Checking Submissions of Consultants". Whether spot check or full check had been adopted for the tender documents and the contract drawings? If spot check was conducted, the basis for choosing which part of the tender documents/contract drawing for checking. The reasons for unable to detect the above discrepancy and whether HyD considered it necessary to review the above Guidelines. If no, why not;*

*(iii) according to the evidence given by Project Manager/Major Works Project Management Office, HyD at the public hearing, the thickness of smoothing shotcrete could vary depending on the rock conditions. Would this justify the 100 mm thickness requirement in the Particular Specification instead of using 170 mm;*

*(iv) an extract of the relevant part of the tender documents/contract relating to how omitted works items in BQ were to be handled and explain how the cost for the 170 mm shotcrete was to be determined;*

*(v) copy of communication records with Consultant X to clarify/investigate into the matter. Whether any sanction has been imposed on Consultant X in this regard. If yes, details of the sanction. If no, why not;*

*(vi) a breakdown of the \$43.7 million paid to Contractor B, and how had HyD verified the accuracy of Consultant X's cost estimation;*

- (i) Relevant parts of the tender documents in relating to the thickness of the smoothing shotcrete requirements including the Particular Specification (PS) clause 27.74(5) (i.e. 100 mm at maximum) and the contract drawing No. 94099/ENT/4203 (i.e. 170 mm) are enclosed in **Appendix A**.
- (ii) HyD had spot checked the documents, designs and drawings prepared by Consultant X under Contract B in accordance with HyD's document "HQ/GN/02 Guidelines for Checking Submissions of Consultants" ("HQ/GN/02"). In accordance with the Guidelines, HyD selected specific areas or items to carry out detailed check on the PSs, drawings and BQ. Based on records, HyD had checked PS Section 27 and drawing and provided comments to Consultant X. Notwithstanding the checking and approval by HyD, according to the consultancy agreement, it shall not affect the responsibilities of the Consultant X to provide and complete the professional services including the preparation of tender documents. In view of the size of the tender documents, the checking of the tender documents including PSs, drawings and BQ was divided and assigned amongst different officers at that time in order to complete the checking within a short period. This might be a reason for not detecting the discrepancy amongst the documents. HyD would review and update the HQ/GN/02 to enhance the checking system and has reminded individual project team to assign the checking of concerned or related sections amongst different parts of tender documents to the same officer.
- (iii) According to the PS of Contract B, the thickness of the smoothing shotcrete should be between 30 mm and 100 mm outside the extrados of the permanent concrete lining of the tunnel. According to the contract drawing, the thickness of the temporary support layer was shown as 170 mm from the permanent concrete lining, and this temporary support layer also included the smoothing shotcrete layer. As the contract drawing did not show a demarcation for the smoothing shotcrete layer and the temporary support layer, there was a discrepancy in the thickness of smoothing shotcrete required between the contract drawing (i.e. 170 mm) and the PS clause (i.e. 100 mm at maximum). If the smoothing shotcrete was to be applied to bare rock surfaces, the thickness should have to be 170 mm. In other words, if temporary support layer was required depending on the rock conditions and the smoothing shotcrete was to be applied following the application of temporary support layer, the thickness of the smoothing

shotcrete might be 100 mm as specified in the PS.

- (iv) Pursuant to General Conditions of Contract (“GCC”) Clauses 59 and 61 (**Appendix B**), the omitted works item was valued at a rate as determined based on the rate of a similar item in the BQ of Contract B.
- (v) Copy of communication record from Consultant X to clarify/investigate into the matter with the relevant attachments is enclosed in **Appendix C**.

According to GCC Clause 59, any items omitted from the BQ shall be corrected by the Engineer (i.e. Consultant X) and the value of the works shall be ascertained in accordance with Clause 61. Consultant X had handled this omitted item in accordance with the contract.

According to the guidelines stipulated at that time in Works Technical Circular of Development Bureau (“DEVB TC(W)”) No. 2/2009 on management of consultants’ performance, the performance score of a consultant on individual consultancy is based on an overall assessment of individual aspects concerned. These performance scores will be consolidated into the consultant’s performance rating to be considered in the bidding of future consultancies. Regulating actions, such as suspension from bidding, will be taken against a consultant by the project department concerned under serious circumstances e.g. court conviction, violation of laws, bankruptcy, the consultant having received two consecutive adverse performance reports, etc. HyD had been conducting assessments on the Consultant X’s overall performance regularly in accordance with the guidelines stipulated in DEVB TC(W) No. 2/2009. Colleagues concerned at that time evaluated Consultant X’s performance in various aspects, including the matters arising from the omitted items, and reflected the overall performance in its performance report. Based on the above guidelines given in DEVB TC(W) No. 2/2009, colleagues concerned at that time considered that the overall performance of Consultant X was acceptable, with no regulating action taken.

- (vi) A breakdown of \$43.7 million paid to Contractor B for the 170mm thick smoothing shotcrete is enclosed in **Appendix D**. Colleagues concerned had checked the Consultant X’s cost estimation for this omitted item and certified payment to Contractor B.

**\*Note by Clerk, PAC:** *Please see Appendix 26 of this Report for Appendix B, and Appendices C and D not attached.*



***(c) according to paragraph 3.11 of the Audit Report, Contractor B made a claim for the costs of performing controlled blasting for the formation of the tunnel perimeter which was omitted in BQ. Please advise/provide:***

***(i) whether the formation of the tunnel perimeter could be accomplished by techniques other than controlled blasting. If yes, whether it was assumed in the contract that this alternative technique was to be used. If no, why is controlled blasting not included in BQ;***

***(ii) copy of communication records with Consultant X to clarify/investigate into the matter. Whether any sanction has been imposed on Consultant X in this regard. If yes, details of the sanction. If no, why not;***

**(i)** According to the PS of Contract B, controlled blasting technique is specified for the formation of the tunnel perimeter. Controlled blasting was omitted in the BQ possibly because it was not recognized at that time that the original extent of works covered by tunnel excavation in Standard Method of Measurement Section 18 did not include controlled blasting.

**(ii)** Copy of communication record from Consultant X to clarify/investigate into the matter is enclosed in **Appendix E**.

According to GCC Clause 59, any items omitted from the BQ shall be corrected by the Engineer (i.e. Consultant X) and the value of the works shall be ascertained in accordance with Clause 61. Consultant X had handled this omitted item in accordance with the contract.

According to the guidelines stipulated at that time in DEVB TC(W) No. 2/2009 on management of consultants' performance, the performance score of a consultant on individual consultancy is based on an overall assessment of individual aspects concerned. These performance scores will be consolidated into the consultant's performance rating to be considered in the bidding of future consultancies. Regulating actions, such as suspension from bidding, will be taken against a consultant by the project department concerned under serious circumstances e.g. court conviction, violation of laws, bankruptcy, the consultant having received two consecutive adverse performance reports, etc. HyD had been conducting assessments on the Consultant X's overall performance regularly in accordance with the

**\*Note by Clerk, PAC: Appendix E not attached.**

guidelines stipulated in DEVB TC(W) No. 2/2009. Colleagues concerned at that time evaluated Consultant X's performance in various aspects, including the matters arising from the omitted item, and reflected the overall performance in its performance report. Based on the guidelines given in DEVB TC(W) No. 2/2009, colleagues concerned at that time considered that the overall performance of Consultant X was acceptable with no regulating action taken.

***(d) with reference to Table 10 of paragraph 3.20 of the Audit Report, please elaborate/advise:***

***(i) the formula for calculating the prolongation cost;***

***(ii) whether Consultant X's assessment of the extension of time and prolongation costs for the works in Butterfly Valley and Eagle's Nest Tunnel ("EN Tunnel") was justified. Details of the mechanism for HyD to check the consultant's assessment of extension of time and hence the prolongation costs;***

***(iii) whether any extension of time was granted to Contractor B due to its own faults. If yes, details of the faults and number of extension days and the Administration's handling of the prolongation cost incurred;***

(i) Prolongation cost is generally the time related cost (e.g. the costs of a contractor's site establishment, site overheads and general plant) that is typically affected by a delay to the critical path of construction works. The Engineer for the contract would assess the prolongation cost associated with the granted extension of times ("EOTs") on a case by case basis, according to the actual situation and the relevant clauses of the contract. In principle, the prolongation cost is calculated as the time related cost additionally incurred for the relevant delay duration.

(ii) Consultant X's assessment of the EOT and prolongation costs for the works in Butterfly Valley and EN Tunnel was justified as the EOTs were due to additional works at the three slopes arising from actual site conditions undetected at the design stage. According to the terms of the consultancy, consultants shall report to HyD all claims for additional payment and EOT made by the contractor, and submit the details and justifications of the preliminary assessments to enable HyD to provide his views. The consultants shall take into account HyD's views before making their final assessments and informing the contractors the extent of EOTs and any payment to be granted according to relevant clauses of the contract.

(iii) No EOT was granted to Contractor B for delay due to its own faults.

***(e) with reference to paragraphs 3.22(a) and (b) of the Audit Report, please advise:***

- (i) the reasons for conducting additional slope stabilization works at Slope A;***
- (ii) reasons for unable to include the additional slope stabilization works to and installation of watermains on Slope A in the tender documents;***
- (iii) whether HyD considered the scale of site investigations conducted by Consultant X for the works in Butterfly Valley sufficient before the award of contract;***

- (i) Additional slope stabilization works at Slope A were conducted to cope with actual site conditions undetected in earlier site investigations (“SI”).
- (ii) As the actual site conditions were undetected in earlier SI, the additional slope stabilization works to Slope A were unable to be included in the tender documents.

Owing to the additional slope stabilization works to Slope A, the installation of watermains on Slope A was required to be realigned to cope with the actual topographical conditions, and had to be carried out on a steeper slope. As the actual site conditions and the additional slope stabilization works were not anticipated at the design stage, the realignment of watermains on Slope A was also unable to be included in the tender documents.

- (iii) Consultant X had conducted site or ground investigations for Contract B according to Geoguide 2 – Guide to Site Investigation (“Geoguide 2”) published by Geotechnical Engineering Office (“GEO”) and sought GEO’s comments according to Works Lands and Works Branch Technical Circular (“LWBTC”) No. 3/88. On 28 September 1999, GEO had no adverse comments on The Ground Investigation Plan and Proposal for Route 8 Sha Tin Section prepared by Consultant X. Taking into account GEO’s views on the Ground Investigation Plan, colleagues concerned at that time considered the scale of SI sufficient before the award of contract.

HyD agrees to continue to conduct thorough SI as far as practicable with a view to incorporating comprehensive and adequate information for design

and tender purposes. However, as advised in section 10.2 of Geoguide 2, whilst the uncertainties can be reduced but, except by complete excavation, can never be wholly eliminated by a more intensive investigation.

*(f) according to paragraph 3.23 of the Audit Report, Contractor B contended that it was beyond his reasonable contemplation at the time of tender that additional ground investigation and stabilization works to another two slopes located in the vicinity affected by the blasting works of EN Tunnel had to be carried out before obtaining a blasting permit. At the public hearing, Project Manager/Major Works Project Management Office, HyD said that additional ground investigation and stabilization works had to be carried out as squatter huts erected on the above two slopes might be affected by the blasting works. Please advise:*

- (i) a chronology of events leading to the decision to undertake additional ground investigation and stabilization works to the two slopes;*
- (ii) whether Consultant X had, before preparing the tender documents, assessed the possible impact of the blasting works on the relevant squatter huts. If yes, the results of the assessment and why did Consultant X or HyD not notice that the blasting works might affect the relevant squatter huts. If no, why not;*
- (iii) whether HyD agreed that it was unnecessary to conduct the additional ground investigation and stabilization works to the above two slopes at the very beginning, and eventually changed its mind. Has the Administration received any complaints from residents of the relevant squatter huts on the blasting works? If yes, details of these complaints;*
- (iv) are there any guidelines for HyD to follow on assessing the impact of public works projects on the nearby residents in the vicinity of works sites, in particular the structure of their houses. If yes, a copy of these guidelines. If no, how would HyD handle these cases;*
- (v) measures taken/to be taken to enhance the accuracy of site condition information to be obtained from preliminary site investigations for major public works projects in the future. Whether extensive horizontal directional coring will be used for all tunneling works in future to obtain more accurate information;*

(i) Chronology of events is shown below -

<b>Date</b>	<b>Event</b>
29 October 2001	According to LWBTC No. 3/88, Consultant X submitted a Blasting Assessment Report (“BAR”) to GEO and other relevant government departments for comment and approval. The assessment confirmed that the two existing Water Supplies Department (“WSD”) ‘s slopes could withstand the blasting vibration induced from the proposed blasting operation in accordance with the standards stipulated in WBTC No. 13/99 and GEO Report No. 15.
23 & 29 November 2001	WSD and GEO replied that they had no further comment on the blasting assessment for the slopes.
9 January 2004	The occupant of a squatter hut located in between the two WSD’s slopes complained that some wall tiles had fallen from the top of kitchen door frame due to the construction works carried out under Route 8 project. During the joint site inspection between the Contractor and the Resident Site Staff of the Advance Works Contract of Route 8, cracks were found on the structure elements (floor slab, wall and beam) of the squatter hut.
15 March 2004	GEO inspected the site with the Resident Site Staff of the Contract B. The slope directly below the squatter hut was considered in good condition in terms of slope maintenance. The cause of the above cracks was not

	clear.
13 May 2004	WSD advised HyD that regular inspections and maintenance works according to the requirements laid down in Geoguide 5 had been carried out to the slope features. Tension cracks found in 2000 at the crest of slope directly below the squatter hut were repaired. The slopes were also shotcreted in April 2002 to protect the slope surfaces from erosion during rainy seasons.
19 July 2004	In order to reaffirm the stability issue of the slopes under blasting vibration, Consultant X proposed ground investigation works to collect more data to verify the design assumptions made in the slope stability study. As reported by Consultant X, GEO had mentioned to it that without knowing the cause of the cracks, slope upgrading works were still required even if the Factor of Safety ("FOS") of the concerned slopes were found greater than the required FOS, as this would become more conservative to facilitate the proposed blasting operation.
13 September 2004 to 8 November 2004	Ground investigation works were carried out for the slope features.
18 & 25 November 2004	Based on the ground data from the investigation, Consultant X submitted the slope stability assessment and upgrading work design report to GEO.
1 December 2004	GEO had no comments on the assessment and the report.



- (ii) Before preparing the tender documents, Consultant X had assessed and proposed an allowable blasting vibration induced i.e. in terms of peak particle velocity (PPV) for the village houses including the squatter huts in the vicinity of the proposed tunnel blasting works with reference to international standards so as to avoid possible blasting impact on the houses. Consultant X prepared and submitted the BAR to GEO and WSD according to LWBTC No. 3/88. GEO and WSD had reviewed the BAR and had no comments on the blasting assessment results. During construction stage of the project, GEO reconfirmed that they had no adverse comments on the allowable PPV proposed for the village houses including the squatter huts in line with the recommendation given in the BAR prepared by Consultant X during the design stage.
- (iii) The BAR prepared in design stage had assessed the possible impact of the blasting works on the relevant squatter huts and the two slopes, confirming that they would not be affected. GEO had no adverse comments on this. It was considered that additional ground investigation and stabilization works to the above two slopes were not necessary. A complaint about some wall tiles having fallen from the top of kitchen door frame, which was received from the occupant of the concerned squatter hut in early 2004 before the commencement of the blasting works of EN Tunnel. Nevertheless, as mentioned in paragraph (i) and (ii) above, the additional ground investigation and subsequent slope stabilization works were required by GEO to make the slope stability more conservative.
- (iv) For public works involving blasting operations, the project proponent should have obtained GEO's agreement to the pre-contract BAR. The purpose of the pre-contract BAR is to identify all sensitive receivers, assess any adverse effects and risks arising from the transport, storage and use of explosives for blasting, and to demonstrate the feasibility of carrying out the blasting works in a practical, safe and acceptable manner. The "Guidance Note on How to Apply for a Blasting Permit" published by Mines Division of the Civil Engineering and Development Department ("CEDD") provides guidelines for the project proponent to follow in preparing the BAR. A copy of the guidance notes is enclosed in **Appendix F**.
- (v) Development Bureau ("DEVB") has been enhancing the guidance and control on geotechnical works from time to time when required. In

accordance with Technical Circular (Works) No. 29/2002, the Project Department should agree with the GEO the scope and extent of all necessary geotechnical investigation and studies to be carried out as part of the project. In 2005 via ETWB TC(W) No. 15/2005, DEVB requires that for tunnel works, departments should consult GEO on geotechnical appraisals which should also cover the possible scope and extent of SI and geotechnical studies required to reduce uncertainties and risks, and take into account GEO's response in finalizing these documents. The departments or its consultants should also submit the geotechnical design to the GEO for audit, where such works would pose a significant risk to public life or property. This submission should also identify the requirements for any investigation. In 2018, to further enhance the control in major geotechnical works, DEVB requires, via DEVB TC(W) No. 3/2018, departments to submit to GEO, and copy to the Project Cost Management Office ("PCMO") of DEVB, the schematic design proposal with relevant information, such as ground investigation data, for review and comment.

In addition, GEO promulgated in 2004 the "GEO Technical Guidance Note No. 24 Site Investigation for Tunnel Works", advising on the SI techniques for tunnels, including horizontal directional coring ("HDC") which can be very useful for investigating deep tunnels. As this technique can provide continuous information along the tunnel alignment to minimize uncertainty of the tunnel works and enhance the management of risks for the project, where feasible and appropriate, HyD would use this technique more for tunneling works in future. Notwithstanding this, the use of HDC is subject to limitations, such as the driven depths and lengths, the type of core samples that can be taken and the type of geotechnical tests that can be performed etc., and therefore may not be applicable to all tunneling works.

- (g) *whether any mechanism was in place to examine the pecuniary interest between Consultant X and Contractor B. If yes, details of the mechanism and the Administration's findings about the relationship between Consultant X and Contractor B, if any;*

According to the General Conditions of Employment of Engineering and Associated Consultants for a Design and Construction Assignment, Consultants must declare any interest if it is considered to be in real or apparent conflict with their services under the consultancy agreement. In any case the Consultants shall not undertake any services for a contractor in respect of a contract between that contractor and the Employer (i.e. the Government) for which the Consultants are providing a service to the Employer. In fact, Consultant X had declared during the tender assessment that their staff involved in the preparation of the tender report for Contract B had no conflict of interest in connection with the tender assessment, whether actual or perceived, arising between their duties and private interests.

***(h) having regard to the above administration issues of Contract B, please advise:***

- (i) whether HyD considered the performance of Consultant X unsatisfactory and led to cost overruns and delay of Contract B. If yes, has any sanction been imposed on Consultant X. If no, why not;***
- (ii) measures taken/to be taken to strengthen the checking of accuracy of tender documents, contract clauses, drawings and BQs prepared by consultants for major public works contracts in future;***

- (i) Under contracts, the Government has the obligations to pay for the works done and other associated costs which the contractors are entitled to, including omitted items and prolongation costs. Contracts also include provisions for granting EOT for completion due to events covered by the contract provisions, such as additional works, inclement weather etc. The Consultant X had made the relevant decisions in administering the Contract B in accordance with the above contract provisions.

According to the guidelines stipulated at that time in DEVB TC(W) No. 2/2009 on management of consultants' performance, the performance score of a consultant on individual consultancy is based on an overall assessment of individual aspects concerned. These performance scores will be consolidated into the consultant's performance rating to be considered in the bidding of future consultancies. Regulating actions, such as suspension from bidding, will be taken against a consultant by the project department concerned under serious circumstances e.g. court conviction, violation of laws, bankruptcy, the consultant having received two consecutive adverse performance reports etc. HyD had been conducting assessments on the Consultant X's overall performance regularly in accordance with the guidelines stipulated in DEVB TC(W) No. 2/2009. For the items omitted, Consultant X had, in accordance with the GCC, measured and valued the items at a rate as determined based on the rate of similar item in the BQ. For the delays leading to EOTs, they were due to additional works required to be carried out to cope with actual site conditions not anticipated at the design stage. Colleagues concerned at that time evaluated Consultant X's performance in various aspects, including the matters arising from the omitted items and programme delays, and reflected the overall performance in its performance report. Based on the guidelines given in DEVB TC(W)

No. 2/2009, colleagues concerned at that time considered that the overall performance of Consultant X was acceptable with no regulating action taken.

- (ii) HyD would continue to conduct checking on tender documents, contract clauses, drawings and BQs prepared by consultants in accordance with the requirements stipulated in the Project Administration Handbook (“PAH”) and the established guidelines. HyD would review and update the HQ/GN/02 to enhance the checking system and has reminded individual project team to assign the checking of concerned or related sections amongst different parts of tender documents to the same officer. Indeed, CEDD issued in October 2010 the revised PAH, requiring omitted items should be minimized as far as practicable and the BQs should undergo a checking process. To enhance the accuracy of the BQs prepared by the consultants, HyD would request the consultants to conduct independent checks and consider adopting computer tools e.g. Building Information Modeling in carrying out the checking.

### Contract C

- (i) *with reference to paragraphs 3.40 and 3.41 of the Audit Report, details of measures to be implemented to ensure the consistency of time programmes for interface works in all major public works contracts in future.*

HyD would remind its staff and consultants, in preparing tender documents in future, to continue to carefully check and update that the prevailing time programmes and associated contractual provisions for interface works in all contracts involving interfaces with other contracts are still consistent.



- |  |       |   |
|--|-------|---|
| <i>Watertightness Standards - General</i>  | 27.72 | The permanent works shall be watertight with no identifiable flow of water penetrating the lining. Leakage which, in the opinion of the Engineer, is concentrated or significant or affects the use of the works shall be sealed by the Contractor using approved methods and materials.  |
| <i>Watertightness of Tunnels and Adits</i> | 27.73 | <p>(1) The completed tunnels and cross passages shall be substantially watertight with no evidence signs of the following:</p> <ul style="list-style-type: none"><li>a) leaks or any indication of water movement through the primary linings and construction joints</li><li>b) dampness or efflorescence at the exposed concrete surfaces</li><li>c) drips through the overhead duct slab</li><li>d) dampness or leaks which result in staining of the tunnels cladding or internal finishing</li></ul> <p>(2) There shall be no discernible flow of water through the tunnel lining.</p>   |
| <i>Tunnel drainage</i>                     | 27.74 | <p>(1) A drainage system comprising geotextile fleece, drainage pipe sleeves, drainage pipes, graded granular drainage material and manhole pits as shown on the drawings shall be provided in the tunnels. The drainage system shall drain all water collected inside the tunnel to the invert drainage system and eventually to the portal collection points. The invert drainage system shall comply with the relevant provisions of Section 5 of the General Specifications. Waterproofing of the tunnels shall be in accordance with the requirements of PS Clauses 27.103 to 27.107.</p> <p>(2) All grouting associated with the tunnel lining shall be completed to the satisfaction of the Engineer prior to the laying of pipe bedding materials and the granular drainage layer.</p> <p>(3) Initial and permanent drainage works shall be installed in the tunnels to ensure that all concrete is placed in as dry as conditions as practical and that no accumulations of water occur which could affect the quality of the insitu concrete.</p> <p>(4) Water pressure relief holes shall be drilled into the rock or shotcrete to intercept and channel water to the invert drainage system prior to the casting of the concrete lining. The Contractor shall submit for approval of the Engineer, the number, location, size, spacing, length and orientation of the water pressure relief holes to suit the actual conditions encountered.</p> <p>(5) A layer of Grade 25 smoothing shotcrete at least 30 mm thick shall be applied to bare rock surfaces, fibre reinforced shotcrete surfaces and any surface which, in the opinion of the Engineer, may cause puncturing of the drainage geotextile or waterproof membrane. The surface of the smoothing shotcrete shall be between 30 mm and 100 mm outside the extrados of the permanent concrete lining shown on the Drawings.</p> |



## **Guidance Note On How to Apply for a Blasting Permit**



**Mines Division  
Civil Engineering and Development Department**

## **1. Introduction**

- 1.1 Under Regulation 46 of the Dangerous Goods (General) Regulations, no person shall carry out any blasting without the permission of the Commissioner of Mines. This note provides guidance to Contractors on making application for a Blasting Permit to carry out blasting. For private projects, a pre-contract Blasting Assessment Report (BAR) submitted by the Registered Geotechnical Engineer should have been agreed by the Buildings Department as part of the site formation plans approval. For public projects, the project proponent should have obtained GEO's agreement to the pre-contract BAR at the planning and design stages.
- 1.2 The purpose of the pre-contract BAR is to identify all sensitive receivers, assess any adverse effects and risks arising from the transport, storage and use of explosives for blasting; and to demonstrate the feasibility of carrying out the blasting works in a practical, safe and acceptable manner. As it is essentially a feasibility study at the project planning and design stage before award of contract, the assumptions adopted in the BAR are not binding on the Contractor, who can propose alternatives. However, it needs to be appreciated that for private projects, this may require resubmission to the Buildings Department to obtain approval of amendments to the site formation plans, and time needs to be allowed for this statutory process. Buildings Department will consult the Mines Division on the proposed amendments within the statutory period. For public projects, the proposed amendments should be discussed directly with the Mines Division.

## **2. Application for a 'Licence to Possess Category 1 Dangerous Goods' and a 'Permit to Use Category 1 Dangerous Goods'**

- 2.1 When the contract is awarded, the Contractor shall apply for a 'Licence to Possess Category 1 Dangerous Goods' for the possession of explosives for immediate use at a blast site, and a 'Permit to Use Category 1 Dangerous Goods' for preparing, loading and firing of explosive charges. The 'Licence to Possess Category 1 Dangerous Goods' and 'Permit to Use Category 1 Dangerous Goods' are together referred to as a Blasting Permit.

### **2.2 Submission of Applications**

To apply for a Blasting Permit, the Contractor should submit an application to the Commissioner of Mines with the following documents:

- (a) a covering letter enclosing a duly completed application form No. MIN/EXP/F.1CR which can be downloaded from <http://www.cedd.gov.hk/eng/forms/index.html>;
- (b) an updated BAR (known as the Contractor's BAR) to re-visit and confirm or amend the assumptions and recommendations in the pre-contract BAR. The contents of the

Contractor's BAR could be the same as the pre-contract BAR if the site conditions, assumptions and recommendations are confirmed unchanged, or may be amended if required. Please refer to Annex 1 for the contents of a BAR;

- (c) a Method Statement (MS) checked by the Site Supervisory Staff. Annex 2 provides typical contents of a MS;
- (d) six copies of the following site plan of scale 1:500 or 1:1000 showing :
  - i. the intended boundary for the Licence to Possess Category 1 Dangerous Goods, which should normally cover all areas, including all possible accesses to blasting areas within the site boundary;
  - ii. the intended boundary of blasting areas for the Permit to Use Category 1 Dangerous Goods, marked with coordinates together with notes on any restrictions and conditions regarding the blasting proposal;
  - iii. all sensitive receivers, including streets, structures, foundations, railways, public utilities, water mains, drains, sewers, gas mains and other services, geotechnical features such as slopes, retaining walls, boulders, tunnels, caverns, etc. within a plan radius of 150m for tunnel/shaft blasting or 300m for open-cast;
  - iv. the intended boundary of blasting areas shall be confined to such areas requiring blasting and exclude any Dangerous Goods stores, site offices, etc.
- (e) one set of relevant specifications and parts of contract drawings (for government projects) or relevant plans approved by Buildings Department (for private projects) showing any restrictions and conditions on blasting.

### 2.3 Processing of Application

Mines Division will respond normally within 28 days upon the receipt of a submission from the Contractor or within 25 days upon the receipt of the subsequent submission of any missing/supplementary information. Upon the acceptance of the MS and site check to verify that the information and documents submitted are correct and acceptable, Mines Division will provide the pre-licensing requirements to the Contractor for follow-up action. The agreed MS will form part of the conditions for the issue of the Blasting Permit. General pre-licensing requirements will include, but will not be limited to, items listed in Annex 3.

#### 2.4 Issue of Permit

Upon satisfactory completion of the works and compliance with Mines Division's pre-licensing requirements, a Blasting Permit (normally valid for one year) will be issued to the Contractor within 3 working days upon payment of the prescribed licence and permit fees.

#### 2.5 Renewal of Permit

Any application for renewal of a Blasting Permit shall reach the Mines Division not less than 28 days before the expiry date. The Contractor shall provide an updated MS to review the site conditions, the manner of working, precautionary and protective measures to protect the existing sensitive receivers and also new sensitive receivers, if any, during blasting.

**Mines Division**  
**November 2007**

*General guidance is provided in this Note. Site-specific requirements may be imposed by the Commissioner of Mines according to the site conditions and characteristics. Feedback or enquiries on this document can be directed to the Chief Geotechnical Engineer/Mines of the Geotechnical Engineering Office, Civil Engineering and Development Department at 25/F, 410 Kwun Tong Road, Kwun Tong, Kowloon, Hong Kong.*

*Telephone: (852) 2716 8666 Facsimile: (852) 2714 0193 E-mail: [mines@cedd.gov.hk](mailto:mines@cedd.gov.hk)*

### **Contents of a Blasting Assessment**

- (a) Site plans clearly indicating the proposed areas of blasting and locations of all sensitive receivers including streets, structures, foundations, railways, public utilities, water mains, drains, sewers, gas mains and other services, geotechnical features such as slopes, retaining walls, boulders, tunnels, caverns, etc. that may be damaged or destabilised by the proposed blasting works.
- (b) A report containing the results of a study, including the site topography, geology, ground, groundwater and surface water conditions, and the physical site constraints, sensitive receivers and site history.
- (c) A report containing examination of the conditions of the sensitive receivers on and adjacent to the site.
- (d) A report containing an assessment of the effects of blasting works to demonstrate that the proposed blasting would not cause any injury to persons or damage to property and sensitive receivers.
- (e) Proposals of preventive measures to be carried out for sensitive receivers, if considered necessary.
- (f) A list of the alert and cease works limits to be specified for the implementation of blasting works, including blasting vibration limits and air-overpressure limits, etc. to ensure that the blasting works to be carried out would not cause any injury to persons, damage to sensitive receivers, significant disruption to traffic or undue nuisance to the public. The limits proposed shall take into account the existing conditions of all sensitive receivers. The source of the limits and documentary evidence of consultation and agreement, where appropriate, with the key stakeholders (e.g. owners or maintenance agents) of the sensitive receivers shall be provided.
- (g) An outline of the blast design to demonstrate that the blasting works could be safely carried out and the proposed limits and any other constraints could be satisfied.
- (h) A document setting out methods to be employed, working procedures and sequences for all blasting works, and the safety management system.
- (i) Particulars of the site inspections, surveys and monitoring to be carried out to check and measure the effects of blasting, including plans showing the locations of the monitoring stations, the performance criteria and the alert and cease works limits.
- (j) Proposals of protective and precautionary measures to be taken, including any evacuation and closure of public areas (such as roads and other facilities) and warnings needed to protect the sensitive receivers and the safety of the public and workers.
- (k) Proposals of the arrangement for delivery of explosives to the site to demonstrate the practicability of completing the blasting works and the rock excavation needed within the construction period.
- (l) If an on-site explosive store is considered necessary, a report containing an assessment of its feasibility and proposed arrangement.

### Contents of a Method Statement

1. Brief description of the project (including blasting period, amount of rock excavation, works programme, no. of blast per day/week, time of blast, etc.).
2. Outline Design of Blasting Works
  - a. Open-cast blasting
    - i. Table showing General Blasting Parameters (ranges of values, where applicable) in Production Blasting and Pre-split Blasting, which include:

1. Bench Height	2. Hole Diameter	3. Stemming
4. Sub-drill	5. Drill Hole Depth	6. Burden x Spacing
7. Inclination	8. No. of rows	9. Cartridged/Bulk Explosive Charge per Hole
10. Use of Detonating Cord	11. Excavation Volume per Shot	12. Powder Factor
13. Others (e.g. Secondary blasting <sup>1</sup> )		

- ii. Cross-sections showing the charging details of blast holes for production and pre-split blasting.
- b. Tunnel blasting
  - i. Table showing combination of General Blasting Parameters (ranges of values, where applicable) in tunnel blasting (shafts, caverns and subsurface etc.), includes:

1. Face Area	2. Hole Diameter	3. Stemming
4. Drillhole Spacing	5. Drill Hole Depth	6. Drill Hole Inclination
7. Cartridged/Bulk Explosive Charge per Hole	8. Expected Pull	9. Excavation Volume per Shot
10. Powder Factor	11. Use of Detonating Cord	12. Others

3. Typical Daily Blast Design
4. Estimation of Blast Effects
  - a. Blasting induced vibration. A charge weight per delay table based on the allowable PPVs proposed for the nearby sensitive receivers.
  - b. Blasting induced air overpressure. An air overpressure target of 120dBL should be adopted initially for blasting adjacent to sensitive receivers with inhabitants (e.g. residential building, school, hospital, church, etc.) to avoid causing any human discomfort, alarm or damage to hearing. This may subsequently be adjusted upwards or downwards in response to outcome and human reaction.
  - c. Evacuation zone. The zone to be evacuated to protect people against the possible ejection of flyrock, taking into account of the difference in elevation between the blast area and sensitive receivers.
5. Anticipated Maximum Daily Consumption of Explosives types and Quantities

<sup>1</sup> Secondary blasting should be carried out with extreme caution and tailor-made blast design and particular protective and precautionary measures should be provided.



6. Sequence of blasting works
7. Non-Blast zone  
Defining the Non-Blast Zone to avoid causing any unacceptable adverse effects on the stability of adjoining temporary/permanent slopes and/or sensitive receivers as a result of blasting.
8. Protective Measures
  - a. Drawings showing typical details of protective measures<sup>2</sup> against flyrock. Example:
    - (i) Vertical screens;
    - (ii) Blasting cages;
    - (iii) Blast door<sup>3</sup>, etc.
  - b. Arrangement and layout of protective measures to demonstrate the blasting proposal is safe and feasible.
9. Precautionary Measures
  - a. A plan showing the evacuation zone<sup>4</sup> and sentry points.
  - b. For any evacuation zone encroaching onto any public road/area outside the site boundary, temporary closure/evacuation shall only be carried out with the prior agreement from HKP and other government departments concerned. It is the Permittee's responsibility to obtain such agreement in a timely manner before carrying out the blast. If no prior agreement could be obtained, Permittee is required to provide suitable protective measures (e.g. vertical screens, blasting cages, etc. at the blast locations) to protect the affected public area/road located outside the site boundary.
  - c. Evacuation procedures for the Contractor, Sub-contractors and the Site Supervisory Staff.
10. Safe Handling of Explosives
  - a. Cordon-off line to prevent unauthorised entry to the blasting areas during handling of explosives.
  - b. Maximum. no. of personnel permitted at blasting areas.
  - c. Location of handing over the explosives to shotfirer.
  - d. Contractor's own transport of explosives within the site.
11. Inspection and Monitoring plan
  - a. Locations and details of vibration and air overpressure monitoring stations.
  - b. Monitoring Action Levels.
  - c. Requirements for inspection of sensitive receivers before and after each blast.
12. Contractor Organization and Responsibility
  - a. Contractor's drilling and blasting crew organization chart.  
A flow chart details the various steps, working procedures, cross-checking and responsible persons for all blasting related activities.
  - b. The roles, duties and responsibilities of all these Contractor personnel mentioned in the above flow chart.

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<sup>2</sup> Blasting cages and vertical screens may need to be provided at blast locations when appropriate to protect against flyrock affecting adjacent sensitive receivers and members of the public.

<sup>3</sup> A blast door should be provided at each tunnel entrance to protect against ejection of flyrock and to reduce air overpressure during blasting. Sufficient air vents should be formed at areas between the frame and arch ribs to release air pressure effectively, and the door should be covered with some acoustic materials to mitigate air overpressure.

<sup>4</sup> A mobile robust blast shelter for the shotfirer should be provided if he chooses to remain in the evacuation zone during the blast.

- c. Channels of communication between the Contractor and the Site Supervisory Staff.
  - d. An emergency contact list.
13. Contingency plan for the following scenarios, but not limited to :
- a. Loaded blastholes not being able to discharge within the same day.
  - b. Thunderstorm or lightning.
  - c. Rainstorm.
  - d. Typhoon.
  - e. Misfire.



### Typical Pre-licensing Requirements

#### 1. General Requirements

- a. Establishment of vibration monitoring stations on site.
- b. Erection of warning signboards at major accesses to prevent unauthorised vehicles or personnel entering the evacuation zone after the commencement of warning signals prior to the blasting.
- c. Provision of sufficient numbers of wooden boxes for storing electric detonators on the journey to the blasting area(s). The wooden boxes shall be painted in red with words “Danger-Detonators” “危險-雷管” painted in white letters/characters of not less than 40mm in height on four sides and the top.
- d. Completion and return to Mines Division the ‘Authorised signature for placing and ordering for an explosives delivery’ form.
- e. A visit by the Contractor to the Mines Division office together with the proposed shotfirer(s) for an interview to discuss the delay firing techniques and other safety conditions required for the site, during which the Contractor should bring to Mines Division office for test and registration the firing equipment and circuit testing equipment to be used for initiation of blast.
- f. Arrangement with the appointed explosives supplier(s) to give briefing(s) to the blasting crew to enhance their awareness on the method of safe handling and use of explosives (i.e. cartridges, bulk emulsion explosives, detonating cords and initiation system) to be used for blasting, and submission of the training attendance records.

#### 2. Open-cast Blasting

- a. Erection of boundary markers at all control points to identify the blasting area requiring different protective measures, design blasthole diameter, etc. These markers shall be made of steel poles of not less than 60mm in diameter anchored in concrete and projected not less than 1.5m above ground.
- b. Vegetation and overburden has to be stripped to form a level platform so that the height and other details of rock face to be blasted and the distances from any sensitive receivers (i.e. adjacent properties, structures, utilities and installations) to be protected can be measured and shown on plan. Prior stripping of overburden may be waived if protective measures are not required for the blast.
- c. Sufficient protective measures (eg. roof-over meshes, vertical screens and protective cages, etc.) and quantities of gunny sacks, mesh covers and filled sandbags, if proposed, required for the daily blasts are available on site.
- d. Provision of a specially constructed mobile robust blast shelter for the shotfirer if he chooses to remain in the evacuation zone during the blast.
- e. Provision of a portable lightning detector to monitor the approach of thunderstorms.

#### 3. Tunnel Blasting

- a. Construction of a blast door and/or blast screen<sup>1</sup>.
- b. Provision of a stray current detector.

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<sup>1</sup> A typical blast screen normally consists of wire mesh and conveyor belt, or equivalent.



THE GOVERNMENT OF THE HONG KONG  
SPECIAL ADMINISTRATIVE REGION

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GENERAL  
CONDITIONS OF CONTRACT  
FOR  
CIVIL ENGINEERING WORKS



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**57.** If in the course or for the purpose of the execution of the Works or any part thereof any highway or other road or way shall have been broken into then notwithstanding any other provision of the Contract:

Temporary  
reinstatement

- (a) if the permanent reinstatement of such highway or other road or way is to be carried out by the appropriate authority or by some person other than the Contractor, the Contractor shall at his own expense and independently of any requirement of or notice from the Engineer be responsible for the making good of any subsidence or shrinkage or other defect, imperfection, settlement or fault in the temporary reinstatement of such highway or other road or way and for the execution of any necessary repair or amendment thereof from whatever cause the necessity arises until the end of the Maintenance Period in respect of the Works beneath such highway or other road or way or until the authority or other person as aforesaid shall have taken possession of the Site for the purpose of carrying out permanent reinstatement, whichever is the earlier. The Contractor shall indemnify the Employer against and from any damage or injury to the Employer or to third parties arising out of or in consequence of any neglect or failure of the Contractor to comply with the foregoing obligations or any of them and against and from all claims, demands, proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto;
- (b) as from the end of such Maintenance Period or the taking of possession as aforesaid, whichever is the earlier, the Employer shall indemnify the Contractor against and from any damage or injury as aforesaid arising out of or in consequence of or in connection with the said permanent reinstatement or any defect, imperfection or failure of or in such work of permanent reinstatement and against and from all claims, demands, proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto;
- (c) where the authority or other person as aforesaid shall take possession of the Site as aforesaid in Portions or parts the responsibility of the Contractor under paragraph (a) of this Clause shall cease in regard to any such Portion or part at the time possession thereof is so taken but shall during the continuance of the said Maintenance Period continue in regard to any Portion or part of which possession has not been so taken and the indemnities given by the Contractor and the Employer respectively under paragraphs (a) and (b) of this Clause shall be construed and have effect accordingly.

**58.** (1) At any time prior to the issue of the maintenance certificate in accordance with Clause 80 the Contractor shall, if instructed by the Engineer in writing, investigate the cause of any defect, imperfection or fault under the directions of the Engineer.

Investigating  
defects

Provided that if the Engineer at his absolute discretion so decides, the Employer shall be entitled, after giving reasonable notice in writing to the Contractor, to have such investigation carried out by his own workers or by other contractors.

(2) If such defect, imperfection or fault shall be one for which the Contractor is liable in accordance with the provisions of the Contract, the expense incurred in investigating as aforesaid shall be borne by the Contractor and he shall in such case repair, rectify and make good such defect, imperfection or fault together with any consequential damage at his own expense.

(3) If such defect, imperfection or fault shall be one for which the Contractor is not so liable, then the Engineer shall value any investigation and remedial work carried out by the Contractor as aforesaid in accordance with Clause 61, and shall certify in accordance with Clause 79.

#### MEASUREMENT, VARIATIONS, VALUATIONS AND CLAIMS

**59.** (1) Except where any statement in the Bills of Quantities expressly shows to the contrary the Bills of Quantities shall be deemed to have been prepared and measurements shall be made according to the procedures set forth in the Method of Measurement stated in the Preamble to the Bills of Quantities.

Bills of  
Quantities and  
measurement

(2) The quantities set out in the Bills of Quantities are estimated quantities and they are not to be taken as the actual and correct quantities of the work to be executed.

(3) Any error in description in the Bills of Quantities or item omitted therefrom shall not vitiate the Contract nor release the Contractor from the execution of the whole or any part of the Works according to the Drawings and Specification or from any of his obligations or liabilities under the Contract. The Engineer shall correct any such error or omission, shall ascertain the value of the work actually carried out in accordance with Clause 61, and shall certify in accordance with Clause 79.

Provided that there shall be no rectification of any error, omission or wrong estimate in any description, quantity or rate inserted by the Contractor in the Bills of Quantities.

- (4) (a) For the purpose of calculating the Final Contract Sum the Engineer shall ascertain and determine by measurement the quantity of work executed in accordance with the Contract. Subject to (b) of this sub-clause such work shall be valued at the rates set out in the Bills of Quantities or if there are no appropriate rates in the Bills of Quantities then at other rates determined in accordance with the Contract.
- (b) Should the actual quantity of work executed in respect of any item be substantially greater or less than that stated in the Bills of Quantities (other than an item included in the daywork schedule if any) and if in the opinion of the Engineer such increase or decrease of itself shall render the rate for such item unreasonable or inapplicable, the Engineer shall determine an appropriate increase or decrease of the rate for the item using the Bills of Quantities rate as the basis for such determination and shall notify the Contractor accordingly.
- (5) (a) When any part of the Works is required to be measured the Engineer shall inform the Contractor who shall forthwith attend or send a representative to assist the Engineer in making such measurement and shall furnish all particulars required by him. Should the Contractor not attend or neglect or omit to send such representative then the measurement made by the Engineer shall be taken to be the correct measurement of the work.
- (b) For the purpose of measuring such permanent work as is to be measured by records and drawings the Engineer's Representative shall prepare records and drawings month by month of such work and the Contractor, as and when called upon to do so in writing, shall within 14 days attend to examine and agree such records and drawings with the Engineer's Representative and shall sign the same when so agreed and if the Contractor does not so attend to examine and agree any such records and drawings they shall be taken to be correct.
- (c) If after examination of such records and drawings the Contractor does not agree the same or does not sign the same as agreed they shall nevertheless be taken to be correct unless the Contractor shall, within 14 days of such examination, lodge with the Engineer for a decision by the Engineer a statement in writing of the respects in which such records and drawings are claimed by the Contractor to be incorrect.

#### Variations

**60.** (1) The Engineer shall order any variation to any part of the Works that is necessary for the completion of the Works and shall have the power to order any variation that for any other reason shall in his opinion be desirable for or to achieve the satisfactory completion and functioning of the Works. Such variations may include:

- (a) additions, omissions, substitutions, alterations, changes in quality, form, character, kind, position, dimension, level or line;
- (b) changes to any sequence, method or timing of construction specified in the Contract; and
- (c) changes to the Site or entrance to and exit from the Site.

(2) No variation shall be made by the Contractor without an order in writing by the Engineer. No variation shall in any way vitiate or invalidate the Contract but the value of all such variations shall be taken into account in ascertaining the Final Contract Sum.

#### Valuing variations

**61.** (1) The Engineer shall determine the sum which in his opinion shall be added to or deducted from the Contract Sum as a result of an order given by the Engineer under Clause 60 in accordance with the following principles:

- (a) Any item of work omitted shall be valued at the rate set out in the Contract for such work.
- (b) Any work carried out which is the same as or similar in character to and executed under the same or similar conditions and circumstances to any item of work priced in the Contract shall be valued at the rate set out in the Contract for such item of work.
- (c) Any work carried out which is not the same as or similar in character to or is not executed under the same or similar conditions or circumstances to any item of work priced in the Contract shall be valued at a rate based on the rates in the Contract so far as may be reasonable, failing which, at a rate agreed between the Engineer and the Contractor.

Provided that if the nature or extent of any variation ordered in accordance with Clause 60 relative to the nature or extent of the Works or any part thereof shall be such that in the opinion of the Engineer any rate contained in the Contract for any item of work is by reason of such variation rendered unreasonable or inapplicable then a new rate shall be agreed between the Engineer and the Contractor for that item, using the Contract rates as the basis for determination.

(2) In the event of the Engineer and the Contractor failing to reach agreement on any rate under the provisions of sub-clause (1) of this Clause, the Engineer shall fix such rate as shall in his opinion be reasonable and notify the Contractor accordingly.

**62.** (1) The Engineer may, if in his opinion it is necessary or desirable, order in writing that any work to be carried out as a result of a variation ordered under Clause 60 shall be executed on a daywork basis. Daywork

(2) The Contractor shall then be paid for such work under the conditions and at the rates set out in the Contract or if no such conditions and rates have been included, at such rates as the Engineer shall determine as being reasonable.

(3) The Contractor shall furnish to the Engineer such receipts or other vouchers as may be necessary to prove the sums paid and before ordering materials shall, if so required by the Engineer, submit to the Engineer quotations for the same for his approval.

(4) In respect of all work executed on a daywork basis the Contractor shall during the continuance of such work deliver each working day to the Engineer's Representative a list, in duplicate, of the names and occupations of and time worked by all workers employed on such work on the previous working day and a statement, also in duplicate, showing the descriptions and quantity of all materials and Constructional Plant used thereon or therefor. One copy of such lists and statements shall be agreed as correct or be rejected with stated reasons, be signed by the Engineer's Representative and returned to the Contractor within 2 days exclusive of General Holidays.

(5) At the end of each month the Contractor shall deliver to the Engineer's Representative a priced statement of the labour, materials and Constructional Plant used on a daywork basis.

Provided that if the Engineer shall consider that for any reason the sending of such statement by the Contractor in accordance with the foregoing provision was impracticable the Engineer shall nevertheless be entitled to authorize payment for such work either as daywork, on being satisfied as to the time employed and the Constructional Plant and materials used thereon, or at such value as shall in the Engineer's opinion be reasonable.

(6) The Contractor shall inform the Engineer's Representative in advance whenever the Contractor proposes to carry out daywork ordered by the Engineer and shall afford every facility for the Engineer's Representative to check all time and materials for which the Contractor proposes to charge therefor.

**63.** If upon written application by the Contractor to the Engineer the Engineer is of the opinion that the Contractor has been or is likely to be involved in expenditure for which the Contractor would not be reimbursed by a payment made under any other provision in the Contract by reason of the progress of the Works or any part thereof having been materially affected by: Disturbance to the progress of the Works

- (a) the Contractor not having received in due time necessary instructions, orders, directions, decisions, Drawings, specifications, details or levels from the Engineer for which the Contractor specifically applied in writing on a date which, having regard to the time for completion of the Works prescribed by Clause 49 or to any extension of time then granted by the Engineer, was neither unreasonably distant from nor unreasonably close to the date on which it was necessary for the Contractor to receive the same, or
- (b) any variation ordered in accordance with Clause 60, or
- (c) the opening up for inspection in accordance with Clause 45 of any work covered up or the testing of materials or workmanship not required by the Contract but directed by the Engineer or the Engineer's Representative in accordance with Clause 42(1) unless the inspection or test showed that the work, materials or workmanship were not in accordance with the Contract, or
- (d) delay caused by any person or any company, not being a utility undertaking, engaged by the Employer in supplying materials or in executing work directly connected with but not forming part of the Works, or
- (e) late delivery of material, plant or equipment by the Employer,

香港特別行政區政府

The Government of the Hong Kong Special Administrative Region

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發展局

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8 August 2018

Mr. Anthony CHU  
Clerk to Public Accounts Committee  
Legislative Council Secretariat  
Legislative Council Complex  
1 Legislative Council Road  
Central, Hong Kong

Dear Mr. CHU,

**Public Accounts Committee**

**Consideration of Chapter 8 of the Director of Audit's Report No. 70**

**Sha Tin Section of Route 8**

With reference to your letter ref. CB4/PAC/R70 dated 24 July 2018 sent to the Development Bureau, requesting the Administration to provide response and/or information on matters set out in Part (III) to the Appendix of your letter, we provide below our responses :

Contract B

- (a) *according to paragraph 3.23 of the Audit report, Contractor B contended that it was beyond his reasonable contemplation at the time of tender that additional ground investigation and stabilization works to another two slopes located in the vicinity affected by the blasting works of EN Tunnel had to be carried out before obtaining a blasting permit.*

*At the public hearing, Project Manager/Major Works Project Management Office, HyD said that additional ground investigation and stabilization works had to be carried out as squatter huts erected on the above two slopes might be affected by the blasting works. Please advise:*

- (i) are there any guidelines for the Administration to follow on assessing the impact of public works projects on the nearby residents in the vicinity of works sites, in particular the structure of their houses. If yes, a copy of these guidelines. If no, how would the Administration handle these cases;*

**Response :**

The Administration has put in place relevant guidelines for project offices to follow on assessing the impact of public works projects on the nearby residents in the vicinity of works sites. As a general guide, the Project Administration Handbook for Civil Engineering Works (PAH) specifies in its Chapter 4 Section 1.3 that project offices should give due consideration of construction methods and imposed constraints, as well as prevention of accidental damage requiring repair beyond the scope of routine maintenance. Section 4.1.2 of Geoguide 2 also advises that because of the dense urban development in Hong Kong, construction activities can often affect adjacent property. It is therefore essential that investigations should cover all factors that may affect adjacent property, including features such as slopes and retaining walls. Where possible, records of ground levels, groundwater levels and relevant particulars of adjacent properties should be made before, during and after construction. Where damage to existing structures is a possibility, adequate photographic records should be obtained. Adjacent buildings, structures and buried services, including pipes conveying water, gas or sewage, should be specifically considered, as they may be affected by vibrations, ground settlement or movement, or changes in groundwater levels during and after construction activities on the site. Hospitals and other buildings containing sensitive instruments or apparatus should be given special consideration.

There are also specific guidelines established for projects of special nature. For example, for projects involving rock blasting, Chapter 4 Sections 3.5 and 4.6.13 of the PAH stipulate that project office should conduct and submit a Blasting Assessment (BA) as part of the geotechnical submissions to the Geotechnical Engineering Office (GEO) of the Civil Engineering Development Department (CEDD) for comment and agreement. The BA submission should contain, among other information, a report containing an assessment of the effects of blasting works, and proposals of preventive measures, to demonstrate that the proposed blasting would not cause any injury to persons or damage to property and sensitive receivers, including streets, structures, foundations, railways, public utilities, watermains, drains, sewers, gas mains and other services, geotechnical features such as slopes, retaining walls, boulders, tunnels, caverns, etc. that may be damaged or destabilized by the proposed blasting works. The necessary content of a Blasting Assessment is given in its Appendix 4.7. At the construction stage, the contractor should obtain a Blasting Permit from the Commissioner of Mines prior to commencement of the blasting works. The contractors should demonstrate that all necessary measures have been in place to prevent the blasting works from causing damage or adverse effects to adjacent facilities and structures, significant disruption to traffic or undue nuisance to the public, or any risk of injury to the public and the people working on site. The Blasting Permit will not be issued until the Blasting Assessment and Method Statement have been found satisfactory and the site is ready for blasting with all the site preparatory works completed to the required standards as per Chapter 7 Section 21.6 of the PAH. Copies of relevant part of the guidelines are enclosed in **Appendix A**.

- (ii) *measures taken/to be taken to enhance the accuracy of site condition information to be obtained from preliminary site investigations for major public works projects in the future. Whether extensive horizontal directional coring will be used for all tunneling works in future to obtain more accurate information;*



**Response :**

The Administration has published the Geoguide 2 – “Guide to Site Investigation” (the Guide) giving guidance on good site investigation practice for project offices to plan and carry out investigation of the sites, with the purposes of assessing their suitability for civil engineering and building works, and acquiring knowledge of site characteristics that affect the design and construction of such works and the security of adjacent properties. The Administration also conducts regular review and update to the Guide (last updated in December 2017) to incorporate the latest technical guidelines and the best practices relating to site investigation, thereby enhancing the accuracy of site condition information obtained from site investigation for public works projects.

For projects that involve tunneling works in particular, Sections 4.6 and 10.9 of the Guide provide guidelines for the relevant site investigation works. The Administration also encourages the use of long horizontal boreholes parallel to the proposed tunnel alignment to obtain more comprehensive ground information and relevant guidelines are available in GEO Technical Guidance Note No. 24 – “Site Investigation for Tunnel Works”. Copies of relevant part of the guidelines are enclosed in **Appendix B**.

- (b) *having regard to the administration issues of Contract B, please advise measures taken/to be taken to strengthen the checking of accuracy of tender documents, contract clauses, drawings and BQs prepared by consultants for major public works contracts in future;*

**Response :**

Civil engineering construction contract is a very complex legal document containing several inter-related documents each of which plays an important role in defining the obligations and responsibilities of the parties concerned or in providing information on the works to be constructed. In recognition of its importance, the Administration highlights in the synopsis of Chapter 5 of PAH reminding project offices

that it is essential to prepare the contract documents for each contract with great care and by an experienced professional who has thorough knowledge of the works to be constructed. It is also necessary to scrutinize the contract documents for comprehensive coverage, accuracy and consistency with one another before tenders are invited. Sections 1.3 to 1.5 of the Chapter require project offices to exercise care in avoiding any ambiguities or discrepancies in the documents which form a contract, seek advice from contract advisers on tender documents when genuine doubts emerge and submit tender documents for contracts estimated to exceed \$300M in value to the Legal Advisory Division (Works) of DEVB for legal vetting prior to calling for tenders. In particular, Section 7.2 of Chapter 5 gives guidance on preparation of Bill of Quantities (BQs). The Administration has also updated this Section to specify the need of minimizing omitted items as far as practicable and the BQs should undergo a checking process to ensure the completeness and accuracy of the BQ and elimination of major errors. To enhance the accuracy of the BQs prepared by the consultants, the Administration highlights in Chapter 6 Section 3.12 of the PAH and Development Bureau Technical Circular (Works) No. 7/2017 requesting the project offices and the consultants to conduct a pre-tender cross-checking procedure in the preparation of BQs and use Building Information Modeling technology in project design stages, which can enhance the preparation and/or checking of the BQs. Also, the Administration keeps reminding project offices to duly reflect the consultants' performance in their performance reports in accordance with Appendix A and B of Development Bureau Technical Circular (Works) No. 3/2016 if deficiencies in the quality of tender documents prepared by them are identified. Copies of relevant part of the guidelines are enclosed in **Appendix C**.

## Contract C

- (c) *with reference to paragraphs 3.40 and 3.41 of the Audit Report, details of measures to be implemented to ensure the consistency of time programmes for interface works in all major public works contracts in future.*

### **Response :**

To ensure the consistency of time programmes for interface works in public works contracts involving multi-contract arrangements, Section 9.1 in Chapter 5 of PAH requires that for projects (i) involving sequential handling-over of the project site among contractors of concurrent contracts and/or (ii) in which the work progress of one contractor is dependent on that of another contractor in the same project, the project offices should carefully assess the compatibility of the multi-contract arrangement with the preferred contract forms of the project. Besides, time allowance for programme of interfacing works varies depending on the scale and complexity of the interfacing works to be encountered by the project concerned. For a consistent approach in assessing the allowance for critical site activities, including interfacing works with other parties, the Administration has enhanced the Chapter 5 of PAH in 2018 to introduce a checklist under its Appendix 5.57 requesting project offices to complete the checklist with relevant directorate officer's endorsement prior to tender invitation. Copies of relevant part of the guidelines are enclosed in **Appendix D**.

Yours sincerely,



( Victor FY CHAN )

*for Secretary for Development*

Encl.

c.c.	Secretary for Transport and Housing	(fax no. 2537 6519)
	Secretary for Financial Services and the Treasury	(fax no. 2147 5239)
	Director of Highways	(fax no. 2714 5203)
	Director of Civil Engineering and Development	(fax no. 2246 8708)
	Commissioner for Transport	(fax no. 2802 2361)
	Director of Architectural Services	(fax no. 2810 7341)
	Director of Electrical and Mechanical Services	(fax no. 2882 9042)
	Director of Audit	(fax no. 2583 9063)

**CHAPTER 4****PROJECT DESIGN AND ESTIMATES**

**The parts of the PAH shown in blue and bold should only be updated by Works Branch of Development Bureau.**

<b>Rev</b>	<b>Issue Date</b>	<b>Amendment Incorporated</b>
First Issue	December 2016	NA
1	25 August 2017	Amd No. 3/2017
2	24 October 2017	Amd No. 4/2017

## **1. GENERAL CONSIDERATIONS FOR DESIGN**

### **1.1 AUTHORITY**

Preliminary and detailed design of capital works projects should commence in accordance with the project status indicated in ETWB TCW No. 4/2006.

### **1.2 RESOURCES**

The design should be undertaken either:

- (a) By in-house staff, or
- (b) By consultants, or staff of other departments/offices/divisions in cases where capacity to undertake the design does not exist in-house, or where there is a lack of in-house expertise, or
- (c) By quasi-government organisations or private parties in cases where the design and construction of the Works are entrusted to them.

Reference should be made to Chapter 1 (Project Planning) and the Handbook on the Selection, Appointment and Administration of Engineering and Associated Consultants (EACSB Handbook) on the resources planning and the procedures for the employment of consultants for design of projects. Reference should also be made to Chapter 8 (Term Contract Works) regarding situations mentioned in sub-paragraph (c).

### **1.3 DESIGN OBJECTIVES**

The basic aim of the design process is to produce a design that is:

- (a) Capable of performing the intended functions throughout the design life,
- (b) Environmentally acceptable, both during construction and in the long term,
- (c) Within the scope approved by FC,
- (d) Economical in terms of both capital and recurrent costs, and
- (e) Free of potential hazards and risks to the clients, frontline workers, users and maintenance parties as far as possible.

In connection with (d) above, the project engineer should exercise the best control of the project cost and the following aspects should be considered critically (DEVB's memo ref. (i) in DEVB(W) 505/83/04 dated 3.8.2015):

- (i) Fit-for-purpose designs are designs with appropriate optimality criterion and robustness. Such designs should be adopted and over-redundancies, such as temporary provisions and standby equipment which are not fully justified,

should be cut down. In addition, the adoption of standard or precast designs for cost saving and/or better work efficiency purposes should be explored,

- (ii) Consideration on optimum contract packaging should be made from a cost saving perspective. There is no hard-and-fast rule on the sizing of contracts, but there is strong tendency that works contracts exceeding \$1 billion may exceed the capability of many Group C contractors. Splitting into contracts below this value will help upkeep tender competition,
- (iii) Where substantial electrical and mechanical (E&M) works are involved in the main building/civil engineering works contracts, consideration should be more favourably made to the direct letting of E&M works contracts or the use of nominated E&M sub-contracts as the lumping of substantial E&M works into the main building/civil engineering works contracts might lead to a higher management overhead and project risk at the E&M sub-contractors' front and hence a higher tender price, and
- (iv) Discretion should be made to look into the merits of the standardised requirements (including those in prevailing circulars, planning manuals or handbooks) which have been developed in the past for their respective justifications and may lead to additional cost in the project, and to review whether the additional cost arising from such requirements is justified. In case substantial cost can be saved without seriously affecting the original intent of the policy associated with such requirements, exemption from relevant authority (such as the Works Branch of DEVB) in complying with these requirements should be sought.

The project engineer should give due consideration to the following:

- (a) Safety, both during construction and in service,
- (b) Appearance, and compatibility with other adjacent private and public projects,
- (c) Construction methods and imposed constraints,
- (d) Possible future expansion and development,
- (e) The effect on utilities,
- (f) Future inspection, maintenance and operation,
- (g) Prevention of accidental damage requiring repair beyond the scope of routine maintenance, e.g. serious damages to bridges by vehicles/ships with illegally high loads/masts,
- (h) Adoption of energy efficient features and renewable energy technologies in government projects and installations,
- (i) Adoption of a strategic and holistic approach to greening and landscape and urban design in order to blend in with the adjacent developments and projects, and

- (j) Adoption of a flexible and balanced approach for tree planting.

The following considerations should also be borne in mind by the project engineer:

- (a) Administrative procedures, particularly that required for land and legal matters, must progress in parallel with the design. Project engineers should note that Land (Miscellaneous Provisions) Ordinance has been put into force. The administrative procedures relating to this Ordinance should be taken into account when excavation is required in the project.
- (b) The need to obtain specialist advice (architectural, structural, geotechnical, environmental, landscape, traffic, water supply, drainage, electrical and mechanical and marine works, etc.) should be identified as early as possible and sufficient lead time should be allowed,
- (c) The social, legal, economic, technological, natural and political environment should be borne in mind when selecting a preferred design option,
- (d) Government policies and traditional practice should also be considered when determining a preferred design option, and
- (e) The need to clear technical vetting requirements by the relevant Authority should be identified as early as possible and sufficient lead time allowed. A list of some common authorities is set out at Appendix 4.5. Project engineers, however, should note that the list might not be exhaustive.

With regard to safety in design, the project engineer should apply the principle of “Design for Safety” to avoid introducing a hazard to the workplace by eliminating it in the first place at the design or planning stage. For projects where Systematic Risk Management (SRM) under ETWB TCW No. 6/2005 is adopted, the project engineer is recommended to expand the SRM to include “Design for Safety” in order to achieve the best project outcomes more efficiently. The project engineer should refer to the Guidance Notes of Design for Safety and the Worked Examples of Design for Safety available on DEVB’s website via the following link:

[http://www.devb.gov.hk/en/publications\\_and\\_press\\_releases/publications/index.html](http://www.devb.gov.hk/en/publications_and_press_releases/publications/index.html).

## 1.4 METHODOLOGY

The design of a project is generally an iterative process, involving the following basic steps:

- (a) The formulation of a conceptual design,
- (b) The identification of suitable alternatives, and the selection of a preferred basic scheme,
- (c) The detailed design calculations and analysis, and
- (d) The drawings.



carried out for a Government project, a copy of the contractor's final ground investigation field work report(s) and any associated laboratory testing report(s) should be submitted directly to the GIU by the Client Department or Office, together with any associated digital data (which should be in AGS or other recognised format) within three months upon the finalisation of the report(s). Each report should be accompanied by a completed Document Submittal Form (available from the Librarian, CEL) stating that the reports are factual. If a report comprises multiple volumes, these should be listed on the Document Submittal Form. These factual reports are kept in the Public Section of the GIU. For those ground investigations carried out under either a term contract or an individual contract administered by the GEO, the necessary submissions will be undertaken directly within the GEO, and therefore no action by the Client Department or Office is necessary.

Interpretative reports and/or data submitted to the GEO (except those produced by the GEO or its Consultants) in support of Government developments are passed to the GIU via the GEO District Divisions and are kept in the Government Section.

The GIU does not contain any documents which are classified as Restricted, Confidential or a higher category, and such documents should not be submitted.

### **3.5 CERTIFICATION AND CHECKING AND AUDITING OF DESIGN PROCESSES**

(Ref.: SETW's memo ref. () in ETWB(PS) 105/118/ Pt. 3 dated 7.4.2004, Review of Project Implementation Issues of HATS Stage I – Implementation Plans on the Recommendations)

The project engineer should certify the correct completion of the design processes in a standard certificate (Appendix 4.3). The design should be checked as a whole using one of the following approaches corresponding to the risk and complexity of the Works:

- (a) For simple and straightforward designs, the designs should be checked by a checking officer, generally for correctness of assumptions and concepts, the method of working, practicality of construction and order of size, plus some detailed checking of critical members or sections. The checking officer is given the design memorandum, design calculations and drawings of the Works as designed. The checking officer should certify the completion of the checking process in a standard certificate (Appendix 4.3). The checking officer need not be an officer from outside the design team, although it is always desirable to have a checking officer who is not associated with the design.
- (b) For complicated or unusual Works, or for Works, which could result in serious consequences if they fail, complete and thorough checking by a checking officer independent of the design team should be executed. Under this approach, the checking officer is given drawings of the Works as designed, the design memorandum, other information on functional/performance requirements and applicable design standards of the Works, but without the design calculations. The checking officer then verifies the design as shown on drawings by executing an independent set of calculations. The checking officer should certify the completion of the checking process in a standard certificate (Appendix 4.3) and tenders should not be invited without this certificate.

The Chief Engineer/Regional Office Head should decide which checking approach is to be adopted for each individual project. The checking officer should be a professional engineer suitably experienced in the type of Works being checked. The Chief Engineer/Regional Office Head is responsible for appointing a suitable checking officer.

The District Divisions of the GEO, CEDD exercise geotechnical control over public developments by auditing the geotechnical aspects of the designs of permanent works and, in the case of tunnel works, the associated temporary works, and the adequacy and standards of site supervision. Geotechnical submissions, as defined in paragraph 4.6.2, are required to be submitted to the GEO for auditing (ETWB TCW Nos. 29/2002, 29/2002A, 4/2004 and 15/2005). For slopes and retaining walls, foundation works within the Scheduled Areas of the Northwest New Territories and Ma On Shan and the Designated Area of Northshore Lantau, tenders should not be invited for any part of the geotechnical works until the geotechnical design has been accepted by the GEO. For tunnel works, where the GEO raises major geotechnical concerns on the public safety aspects of the geotechnical design (or the related Particular Specification or the Employer's Requirements (for Design and Build (D&B) contracts)), the project office must resolve such concerns with the GEO before tenders are invited. For projects that involve rock blasting, the project office should submit a Blasting Assessment as part of the geotechnical submissions to the GEO for comment and agreement. Tenders should not be invited for any part of the geotechnical works until the Blasting Assessment has been accepted by the GEO.

For complicated Works or Works of a nature that there is limited local experience, such as a very long-span bridge, tunnelling works or major underground structures, the project office shall consider if an independent checker from an independent organisation which is separate from that of the designer should be employed to vet the structural or geotechnical design of the whole or part of the Works.

### **3.6 REVISION OF DESIGN CALCULATIONS, RECORDS AND DRAWINGS**

Design calculations, records and drawings should be revised and updated as the need arises. Major design revisions should be checked in the same manner as the original design.

For the compilation of as-constructed design calculations, records and drawings, reference should be made to Chapter 7 (Contract Management).

### **3.7 DESIGNS BY CONSULTING ENGINEERS**

For projects employing consultants for planning and design, the consultants should be requested to submit the complete set of design calculations, records and drawings to the client office/division at the end of the design stage, together with a certification (Appendix 4.7 of EACSB Handbook) for the proper completion of the design process and checking of the design. The consultants should be requested to undertake and warrant to the client office/division that the client office/division will become the absolute and exclusive owner of the complete set of design calculations, records, drawings and documents and all intellectual property rights subsisting therein free from all encumbrances save those intellectual property rights belonging to a third party.

#### **4.6.13 Projects Involving Blasting**

Where designs involve substantial rock excavation, the designer should consider whether blasting would be required for the project. Rock excavation by blasting can adversely affect the stability and integrity of slopes, retaining walls, roads, railways, structures, buildings, services and utilities through ground vibrations and other effects such as fly rock and air-overpressure. The transport, storage and use of explosives for blasting may also pose a safety hazard to the public and disruption of traffic.

If blasting is specified or permitted in the construction works, a Blasting Assessment should be undertaken at the design stage to assess such adverse effects and potential hazards, and to propose adequate and necessary protective, preventive, precautionary and other mitigation measures to demonstrate the practicality of carrying out blasting works and to prevent the works from causing injury to workers and the public, significant disruption to traffic, undue vibration and movement to existing structures and services, or undue nuisance to the public.

The Blasting Assessment should be prepared by a competent person with at least four years relevant experience in blast design and supervision of blasting works, and should be submitted with the curricula vitae of its author to the GEO for agreement prior to tendering of the contract. For complex projects, such as those involving blasting in densely populated or sensitive area, a competent person with more experience would be required. The necessary content of a Blasting Assessment is given at Appendix 4.7. The project office should also consult CGE/Mines of the GEO as early as possible regarding the issues related to the transport, storage and use of explosives. These issues should be properly addressed prior to tendering for the contract and suitable contract requirements should be included.

The project office should ensure that all critical requirements and constraints identified in the Blasting Assessment are properly addressed and a realistic programme for the blasting works is included in the tender documents. The project office should also submit the curricula vitae of the key personnel of the resident site supervision team to the GEO for acceptance, prior to the commencement of the works.

In order to obtain a permission to carry out blasting under the Cap 295 Dangerous Goods Ordinance, the Contractors should demonstrate that all necessary measures have been in place to prevent the blasting works from causing damage or adverse effects to adjacent facilities and structures, significant disruption to traffic or undue nuisance to the public, or any risk of injury to the public and the people working on site. For opencast blasting, such measures should be in place for each blast before the explosives would be provided for loading into blast holes. The project office shall allow sufficient time in the contract for the application of the blasting permits and licences. Detailed information on the use of explosives and the procedures for applying the blasting permits and licences are given in Section 21 of Chapter 7.


#### **4.7 LANDSCAPE AND GREENING WORKS**

It is the government's policy to enhance the quality of our living environment through active planting, and proper maintenance and preservation of trees and other vegetation. To promote greening, greening provisions, including site coverage of greenery, roadside and median utility free planting zone (DEV B TCW No. 2/2012), bridge greening (DEV B TCW No. 2/2013), greening of slopes and retaining walls, skyrise greenery, and trees for preservation or

**APPENDIX 4.7 CONTENTS OF A BLASTING ASSESSMENT**

A Blasting Assessment shall consist of the following:

- (a) Site plans clearly indicating the proposed areas of blasting and locations of all sensitive receivers including streets, structures, foundations, railways, public utilities, water mains, drains, sewers, gas mains and other services, geotechnical features such as slopes, retaining walls, boulders, tunnels, caverns, etc. that may be damaged or destabilised by the proposed blasting works.
- (b) A report containing the results of a study, including the site topography, geology, ground, groundwater and surface water conditions, and the physical site constraints, sensitive receivers and site history.
- (c) A report containing examination of the conditions of the sensitive receivers on and adjacent to the site.
- (d) A report containing an assessment of the effects of blasting works to demonstrate that the proposed blasting would not cause any injury to persons or damage to property and sensitive receivers.
- (e) Proposals of preventive measures to be carried out for sensitive receivers, if considered necessary.
- (f) A list of the action limits to be specified for the implementation of blasting works, including blasting vibration limits and air-overpressure limits, etc. to ensure that the blasting works to be carried out would not cause any injury to persons, damage to sensitive receivers, significant disruption to traffic or undue nuisance to the public. The limits proposed shall take into account the existing conditions of all sensitive receivers. The source of the limits and documentary evidence of consultation and agreement, where appropriate, with the key stakeholders (e.g. owners or maintenance agents) of the sensitive receivers shall be provided.
- (g) An outline of the blast design to demonstrate that the blasting works could be safely carried out and the proposed limits and any other constraints could be satisfied.
- (h) A document setting out the safety management system to be employed, and the working procedures and sequences, where appropriate, for all blasting works.
- (i) Particulars of the site inspections, surveys and monitoring to be carried out to check and measure the effects of blasting, including plans showing the locations of the monitoring stations, the performance criteria and the action limits.
- (j) Proposals of protective and precautionary measures to be taken, including any evacuation and closure of public areas (such as roads and other facilities) and warnings needed to protect the sensitive receivers and the safety of the public and workers.
- (k) Proposals of the arrangement for delivery of explosives to the site to demonstrate the practicability of completing the blasting works and the rock excavation needed within the construction period.

- 
- (l) If an on-site explosive store is considered necessary, a report containing an assessment of its feasibility and proposed arrangement.

**CHAPTER 7****CONTRACT MANAGEMENT**

The parts of the PAH shown in blue and bold should only be updated by Works Branch of Development Bureau.

Rev	Issue Date	Amendment Incorporated
First Issue	December 2016	NA
1	27 February 2017	Amd No. 1/2017
2	29 May 2017	Amd No. 2/2017
3	25 August 2017	Amd No. 3/2017
4	19 December 2017	Amd No. 5/2017
5	16 May 2018	Amd No. 1/2018

require that the dispute be referred to arbitration. Upon receipt of the adjudicator's decision, the Works Department should critically review the adjudicator's decision and timely consult with LAD(W) before the decision is made on whether or not to refer the dispute to arbitration.

For record purposes, works departments shall submit adjudication details to the Development Bureau in accordance with the prescribed forms at Appendix 7.58 and Appendix 7.59.

#### **21.4.3 Disclosure of confidential information to the Public Accounts Committee**

A Special Conditions of Contract for revising GCC Clause 8 is provided in ETWB TCW No. 29/2003 to allow Government to disclose confidential information under certain conditions to the Public Accounts Committee of the Legislative Council concerning matters relating to settlement agreements or the outcome of the arbitration or any other means of resolution of dispute.

#### **21.5 DISCOVERY OF ANTIQUES OR UNUSUAL/SUSPICIOUS OBJECTS** (Subsumed from PWDTC No. 14/73; Ref.: SETW's memo ref. (01AVE-01-2) in ETWB(W) 515/84/02 dated 7.12.2006)

When any antique or article of value is discovered during the execution of public works, the following procedures should be taken:

- (a) For in-house contracts, the resident site staff (RSS) should report to the Engineer in charge of the contract who should then report the matter to the Head of his office and simultaneously contact the Executive Secretary (Antiquities and Monuments), AMO of LCSD. Upon receiving such report, staff of the AMO will conduct inspection at discovery site as soon as possible.
- (b) Where it is not possible to contact the AMO immediately, the Engineer should, at his discretion, decide on the measures to be taken and then confirm them with the AMO as early as possible.
- (c) For consultant-managed contracts, the RSS should adopt the same procedure as for in-house contracts and the Engineer should report the discovery to the Employer without delay.
- (d) The Contractor should also be instructed to carry out all necessary measures for protection or removal, if any, as requested by the appropriate authorities.

In the event that unusual or suspicious objects are found on the Site, it is important that the RSS and the Contractor pay particular attention and take care of these objects and, if in doubt, report immediately to the Police and ER for direction.

#### **21.6 USE OF EXPLOSIVES**



### 21.6.1 General

For projects that involve blasting for rock excavation, the Contractor shall obtain a Blasting Permit from the Commissioner of Mines under the Cap. 295 Dangerous Goods Ordinance (DGO), prior to commencement of the blasting works. The Contractor shall provide a Method Statement when applying for a Blasting Permit. The Method Statement should incorporate all the requirements defined in the Blasting Assessment Report prepared by the Consultants during the design stage, and shall include:

- (a) the method and sequence of the blasting work;
- (b) details of the proposed blast design;
- (c) procedures for review of the blast design based on information from drilling of blast holes and inspection of the blast location by a geologist;
- (d) preventive, protective and precautionary measures;
- (e) monitoring plans;
- (f) contingency plans; and
- (g) the organisation of the site personnel and their responsibilities.

The Contractor may make revisions to the Blasting Assessment Report prepared at the design stage to suit their method of work or the site conditions, provided that such revisions are endorsed by the project office or its Consultants and accepted by the GEO.

Where rock blasting is to be carried out under a flight path and flying rock may cause a hazard to aircraft (including helicopters), the Director of Civil Aviation shall be informed accordingly.

The Blasting Permit will not be issued until the Blasting Assessment and Method Statement have been found satisfactory and the site is ready for blasting with all the site preparatory works (e.g. construction of blasting cages, vertical screens, blast doors, monitoring stations, site magazine, designated unloading area, slope improvement works required etc.) completed to the required standards. The time required for processing a Blasting Permit application depends on the quality of the Contractor's submission and the progress of the site preparatory works. In cases where blasting works need to proceed urgently, the project office should liaise closely with the Mines Division of the GEO. Mines Division will facilitate the processing of applications, as far as possible, provided that safety and security in the transport, storage and use of explosives is not compromised.

### 21.6.2 Reporting

The details of the reporting system required by a Contract are normally stated in the specifications and such a system should be implemented and monitored accordingly. For each blast, the following data, additional to that required by the specifications should be recorded:

- (a) name(s) and Mine Blasting Certificate number(s) of shotfirer(s);



- (b) location and identification number of the blast;
- (c) date and time of the blast;
- (d) quantities and types of explosives and detonators delivered;
- (e) quantities and types of explosives and detonators destroyed on site, or returned to Government Explosives Depot or site magazine;
- (f) blasting details including numbers and pattern of holes drilled, depth, diameter and inclination of the holes, initiating system and sequence, actual charges per hole, rock face orientation and throw direction;
- (g) approximate volume of rock or length of tunnel blasted;
- (h) details of any vibration and air-overpressure readings taken;
- (i) records of implementation of any evacuation of premises and/or road closure prior to the blast; and
- (j) records of inspection of the sensitive receivers before and after the blast by the Contractor's Engineering Geologist or Geotechnical Engineer when required under the Contract.

For any adjacent sensitive receivers (e.g. structure, slope, building, utility, facility etc.) that may be prone to damage by vibration from blasting under the Contract, consideration should be given to taking appropriate vibration monitoring readings even if similar monitoring measures are not stated in the specifications. The Contractor should be instructed to take the necessary readings together with readings from other normally occurring vibrations for comparison purposes, e.g. vibration due to heavy road vehicles.

### **21.6.3 Resident Explosive Supervisors**

Resident Explosive Supervisors (RES) belong to the Resident Site Staff (RSS) team. The project office shall liaise with Mines Division in the project planning stage to work out the explosives delivery logistics and the blasting programme so that any need for RES can be ascertained. The number of RES in the RSS team is dependent on the number of daily blasts required and the explosives delivery arrangement agreed with Mines Division. The site supervisory staff performing the duties of RES should be registered with the Competent Supervisor and their details sent to Mines Division for record. The project office or its Consultant should also consult Mines Division regarding the required training and experience, and the duties of the RES.

When required, RES should be deployed to accompany and keep watch over the explosives to be transported or handled by the contractor until all the explosives are stored in a site magazine, consumed or destroyed at the blasting site. This is to enhance security by preventing explosives being stolen, lost or otherwise mislaid.

In general, the RES duties should include the following:

- (a) check that the amount of explosives drawn from the Government Explosives Depot or site magazine complies with the explosives requisition documents;
- (b) ensure that all explosives drawn are delivered to either the project site magazine or the blast locations and loaded into the blast holes, and that explosives are not stolen, lost or otherwise mislaid (see (d) below for unused explosives);
- (c) check that the explosives drawn are loaded and connected by the shotfirer according to the shotfirer's Charging Details as shown in Appendix 7.42; and
- (d) witness the destruction of any unused explosives by the shotfirer on site, or the return of unused explosives to the site magazine.

#### **21.6.4 Additional Site Supervision Requirements for Blasting Works**

The supervision requirements for projects involving rock blasting are in addition to the qualified site supervision package of Category I, II and III supervisors as defined in ETWB TCW No. 29/2002, 29/2002A and Appendix 7.47 of the PAH. General requirements relating to the supervision of blasting works are given in section 4.3.

The site supervision duties of the Competent Supervisor for blasting works should include:

- (a) checking the Contractor's Blasting Method Statement and the Contractor's Blasting Assessment;
- (b) checking (including both document and site checks) for each blast, that the Contractor's blast design and its implementation, including the installation of protective, precautionary, preventive measures, comply with the Blasting Permit requirements;
- (c) verifying on site that the ground conditions and geology are as stated or assumed in the Blasting Assessment, and that the preventive, protective and precautionary measures as given in the Method Statement are adequate for the actual site conditions;
- (d) ensuring that the preventive measures (e.g. slope upgrading works), when required, have been properly carried out prior to commencement of the blasting works, and that the protective and precautionary measures are carried out in accordance with the Method Statement prior to each blast;
- (e) monitoring regularly the condition of all sensitive receivers and carrying out inspections and reviews before and after each blast;
- (f) supervising directly the work undertaken by the RES and Category III supervisors for blasting works; and
- (g) preparing monthly reports with records of the condition of the site, sensitive receivers, adjacent ground, structures and services, etc.

The additional duties of a Category III supervisor for blasting works should include the following particular items:

- (a) checking the locations and depths of all the blast holes for each blast;
- (b) inspecting the construction of preventive works, if required, for the sensitive receivers;
- (c) inspecting the provision and installation of all necessary protective and precautionary measures prior to each blast, in accordance with the blast design;
- (d) monitoring the site operations and working methods to ensure that they meet the safety requirements set out in the Blasting Permit;
- (e) inspecting the condition of all sensitive receivers before and after each blast;
- (f) checking the adequacy of monitoring of sensitive receivers before and after blasting; and
- (g) reporting the findings of the above checks and inspections to the Competent Supervisor before approval is given to go ahead with the blast.

## 21.7 PAYMENTS OF WAGES

Should it come to the attention of any staff on the Site that a group of workers may not have been paid or not paid correctly, then the matter should be relayed to the ER/Engineer. It is recognised that this information may only be rumour or hearsay but the ER/Engineer should consider the matter and, if deemed necessary, make prompt referrals to the Labour Relations Division of Labour Department in respect of suspected non-payment of wages to workers. A standard proforma for reporting of incidents is shown in Appendix 7.43.

**In July 2008, SDEV promulgated a set of contract measures to prevent non-payment of wages for implementation in all capital works contracts (other than maintenance contracts and E&M supply and installation contracts). The measures include installing smart card systems at sites to keep attendance records; requiring written employment contracts for site personnel and requiring employment of Labour Relations Officers (LRO) to handle employment matters and to monitor payment of wages and Mandatory Provident Fund (MPF) contribution. Moreover, there are provisions for reimbursement of Contractor's contribution to the MPF for his site personnel. To assist project officers in processing the reimbursement in a consistent manner, SDEV has promulgated guidelines at Appendix 7.51. The guidelines do not attempt to deal comprehensively with the relevant contract provisions and should not be taken as an aid to their interpretation. It should be noted that there is no substitute for reading and considering the relevant provisions in the particular circumstances of each contract. (Ref.: SDEV's memo ref. (024Q5-01-4) in DEVB(W) 510/17/01 dated 18.1.2010)**

It is an offence under the Employment Ordinance for wages which become due on the expiry of the last day of the wage period to be paid later than 7 days thereafter. Whilst it

# **Guide to Site Investigation**

**Geotechnical Engineering Office  
Civil Engineering and Development Department  
The Government of the Hong Kong  
Special Administrative Region**

## 4. General Procedures

### 4.1 Extent and Sequence of Investigation

#### 4.1.1 General

*The extent of the investigation depends primarily upon the magnitude and nature of the proposed works and the nature of the site.*

*A site investigation will normally proceed in stages, as follows : desk study; site reconnaissance; detailed examination for design, including ground investigation, topographic and hydrographic survey and special studies; follow-up investigations during construction (Figure 1). This may be followed by appraisal of performance. Some of the stages may overlap, or be taken out of sequence; for example, the site reconnaissance may well take place before completion of the desk study.*

*The costs of a site investigation are low in relation to the overall cost of a project and may be further reduced by intelligent forward planning. Discussion at an early stage with a specialist contractor will help to formulate an efficient and economic plan. The technical requirements of the investigation should be the overriding factor in the selection of investigatory methods, rather than their cost.*

*As far as possible, assembly of the desk study information should be complete, at least in respect of those aspects related to ground conditions, before ground investigation begins. A preliminary ground investigation may be desirable to determine the extent and nature of the main ground investigation. The extent of the ground investigation is discussed in Chapter 10.*

For regional studies or site investigation of projects covering large areas, e.g. road, tunnel or transmission line routes, techniques such as engineering geological and geomorphological mapping, terrain classification and hazard analysis may be useful to delineate critical areas so that detailed investigations can be concentrated in areas where they are most required (Brand et al, 1982; Griffiths & Marsh, 1984; Hansen, 1982).

#### 4.1.2 Adjacent Property

Because of the dense urban development in Hong Kong, construction activities can often affect adjacent property. It is therefore essential that investigations should cover all factors that may affect adjacent property, including features such as slopes and retaining walls (see Chapter 7 and Section 8.3). Where possible, records of ground levels, groundwater levels and relevant particulars of adjacent properties should be made before, during and after construction. Where damage to existing structures is a possibility, adequate photographic records should be obtained.

Adjacent buildings, structures and buried services, including pipes conveying water, gas or sewage, should be specifically considered, as they may be affected by vibrations, ground settlement or movement, or changes in groundwater levels during and after construction activities on the site. Hospitals and other buildings containing sensitive instruments or apparatus should be given special consideration.

Special permission or approval must be obtained when the site is above or near the Mass Transit Railway Corporation's tunnels or structures, or is within the Mid-levels Scheduled Area (see Appendices A and B; see also Chapter 7). The approximate locations of these two features are shown in Figure 2.

## 4.2 Desk Study

As a first stage in a site investigation, a desk study is necessary and Appendix A indicates the types of information that may be required. Much information about a site may already be available in existing records. A summary of the important sources of information is given in Appendix B. Readers are advised to take note of any warning messages on the data, check with the relevant data owners on the reliability, accuracy and completeness of the data they require where necessary, taking into account the needs of their project. Readers are also invited to provide feedback to the GEO should the need to update this Geoguide 2 be identified.

[Amd GG2/01/2017]

A new geological survey is currently underway in Hong Kong to replace the existing 1:50 000 scale geological maps and memoir (Allen & Stephens, 1971); new 1:20 000 scale geological maps will become available between 1986 and 1991 (Figure 3). The new geological survey uses different nomenclature for certain major rock divisions and rock types (Addison, 1986; GCO, 1988; Strange & Shaw, 1986); this should be used wherever possible.

An important source of basic geotechnical information is the Geotechnical Area Study Programme (GASP) publications available from the Government Publications Centre. Systematic terrain evaluation has been undertaken at a scale of 1:20 000 covering the entire Territory (Brand et al, 1982). These publications generally contain Engineering Geology, Terrain Classification, Erosion, Landform and Physical Constraint Maps. Selected areas of the Territory have also been evaluated at the 'district' scale of 1:2 500, but these have not been published. The GASP programme and the areas covered by the GASP publications are shown in Figure 4, and examples of some of the 1:20 000 maps are given in Figure 5.

The Geotechnical Information Unit also contains numerous records of boreholes from throughout the Territory, as well as useful records of landslides, rainfall and piezometric data, and laboratory test results on soil and rock samples. Relevant data can be easily accessed by geographical location of the site. Further details of the Geotechnical Information Unit are given in Appendix B.

A useful bibliography on the geology and geotechnical engineering of Hong Kong is also available (Brand, 1992). Local maps and plans are easily obtained (Table 1), and as-built records of private developments are retained by the Buildings Ordinance Office or the Public Records Office (see Appendix B). Valuable information may often be obtained from aerial photographs, as discussed in Chapter 6.

## Geoguide 2

# Guide to Site Investigation

**Geotechnical Engineering Office  
Civil Engineering and Development Department  
The Government of the Hong Kong  
Special Administrative Region**



#### 4.6 Site Investigation for Tunnel Works

[Amd GG2/01/2017]

Pre-tender site investigation should be as comprehensive as possible to provide adequate information for the design of tunnel works and contract preparation. In addition to the geological and hydrogeological conditions, the site investigation should identify utilities and buried installations to ascertain whether they will interfere with or be affected by the tunnel works (see ETWB TC(W) No. 17/2004 for government projects).

[Amd GG2/01/2017]

There are inherent uncertainties in the subsurface geology and hydrogeology, regardless of the extent of site investigation. Also, physical constraints, e.g. existing buildings and subsurface installations could limit the pre-tender site investigation for particular sections of tunnel works. Therefore, it is essential to make provision for additional ground investigation in the works contract to check and monitor continuously the actual conditions against those assumed, and to take measures to deal with conditions not anticipated but having significant impact on the design, construction, or on life and property.

[Amd GG2/01/2017]

The US Army Corps of Engineers Manual (USACE, 1997) includes a practical guide to the relative cost of site investigation as a proportion of the estimated construction cost. Based on this guide, the typical cost of site investigation for a deep tunnel located in difficult ground conditions and in a dense urban area is about 3-4% of the estimated construction cost. Notwithstanding, the cost of site investigation for a particular project depends greatly on the quality, suitability and adequacy of available information, and the data needed for the design and risk management of the types of tunnel works involved. The client should include adequate funding for site investigation in the project cost estimate.

[Amd GG2/01/2017]

Site investigation for projects involving tunnel works should be phased. This approach is necessary as different phases of the project have different requirements. Also, the tunnel alignment and design requirements can change during route planning or design.

[Amd GG2/01/2017]

Using the data obtained at each phase, the impact of the proposed excavation method on the sensitive receivers identified and the geotechnical risks at each tunnel section should be assessed. The risk assessment should be reviewed when the tunnel alignment is fixed and as more information becomes available.

[Amd GG2/01/2017]

Some simple guidelines on site investigation for tunnelling are given in ITA (2009). An outline of the engineering considerations and site investigation techniques for rock tunnels, based on IMMM (2003), is given in Table 13. Supplementary information on ground investigation techniques is given in Appendix F.

[Amd GG2/01/2017]

For sources of information and expertise, reference should be made to Appendix B of this Geoguide and GEO (2016) for general guidance on, and sources of information for SI and tunnels in Hong Kong. Reference should also be made to Geoguide 4 (GEO, 1992), which contains guidance on site investigation for cavern schemes, much of which is also applicable to tunnels and shaft construction.

[Amd GG2/01/2017]

Information on the pre-Quaternary geology of Hong Kong is given in Sewell et al (2000).



The Hong Kong Geological Survey (HKGS) section of GEO/CEDD has the most detailed information on the geology of Hong Kong and offers an advisory service. HKGS should be consulted, especially at the planning stage of new projects involving tunnel works, in the formulation of geological models, anticipation of difficult areas, and the verification of significant geological features (faults, dykes, contact zones between geological units, etc.). This consultation process in actual projects also allows feedback of important geological information from the project to existing geological archives maintained by HKGS.

[Amd GG2/01/2017]

silt- and clay-rich layers, should also be mapped.

[Amd GG2/01/2017]

- (iii) During the initial phase of ground investigation, emphasis should be directed to developing a representative geological and hydrogeological model rather than testing. The ground investigation should focus on examining and logging the saprolite profile in detail, with emphasis placed on identifying the presence of adversely-oriented, weak silt- and clay-rich layers, especially in the vicinity of the weathering front, regardless or not whether these layers daylight in the slope under investigation. The ground investigation should also identify any such features within the rock mass where they may influence slope stability.

[Amd GG2/01/2017]

Suitable techniques for detailed examination of the saprolite profile should include:

[Amd GG2/01/2017]

- (a) full-face mapping and logging of cut slopes, after stripping of surface cover, and adjacent exposures, [Amd GG2/01/2017]
- (b) excavation and logging of trial pits, and [Amd GG2/01/2017]
- (c) logging of drillholes. [Amd GG2/01/2017]

Suitable techniques for detailed examination of the saprolite profile may also include:

[Amd GG2/01/2017]

- (d) excavation of trenches or adits, [Amd GG2/01/2017]
- (e) continuous sampling in drillholes using triple tube core barrels with air-foam as the flushing medium, and [Amd GG2/01/2017]
- (f) downhole geophysical logging and other downhole techniques, including borehole televiewer and impression packer. (Technical guidelines on the use of downhole geophysical investigation techniques in the identification of weak layers are given in Section 33).

[Amd GG2/01/2017]

## **10.9 Specific Guidance for Tunnel Works**

[Amd GG2/01/2017]

### **10.9.1 Preliminary Design Stage**

[Amd GG2/01/2017]

In the preliminary design stage, recommendations are made on a preferred tunnel

alignment and the scope of works, including risk mitigation measures based on assumed methods of excavation. Ground investigation with a geophysical survey could be undertaken to refine the geological model, to gain additional information on significant geological features, identify sensitive receivers and to establish baseline conditions.

[Amd GG2/01/2017]

Boreholes should extend well below the anticipated depth of the tunnel and shafts to allow for any subsequent changes in the vertical alignment of the tunnel in the detailed design stage, *and because the zone of influence of the tunnel may be extended by the nature of the ground at a greater depth.*

[Amd GG2/01/2017]

Long horizontal boreholes parallel to the proposed tunnel alignment are extremely useful, particularly where the location of the proposed tunnel is overlain by thick layers of deeply weathered rock (McFeat-Smith, 1987).

[Amd GG2/01/2017]

Soil permeability tests and Lugeon tests at close spacings should be undertaken in the boreholes to assess the soil mass and rock mass permeability, respectively. It is important not to overlook areas of apparently strong bedrock, as the mass permeability of these areas may be high and may affect significantly construction of the tunnel works. The test results should be used for development of the hydrogeological model, defining the hydraulic boundary conditions for the design and for assessing the need to control groundwater inflow/drawdown during construction.

[Amd GG2/01/2017]

### **10.9.2 Detailed Design Stage**

[Amd GG2/01/2017]

In the detailed design stage, when the tunnel alignment has been fixed, the main aim of the ground investigation should be to obtain information for the reference design or detailed design of the tunnel works and the associated temporary works. The ground investigation should also identify conditions at likely problematic areas along the chosen alignment. The ground investigation data should be adequate for preparing the design of the ground support, ground treatment, groundwater control works and the risk mitigation measures. It should also be adequate for planning the inspection, testing and monitoring works during construction.

[Amd GG2/01/2017]

Where existing boreholes are found close to or intercepting the tunnel, the risk of these boreholes not properly grouted should be assessed and mitigation measures, where necessary, should be carried out to ensure that these boreholes would not form preferential flow paths that could jeopardize the tunnel construction.

[Amd GG2/01/2017]

New boreholes along the chosen tunnel alignment and shaft locations should generally extend to a sufficient depth below the invert of the tunnel/shafts to obtain information for the assessment of possible failure mechanisms/limit states, and/or construction of the tunnel/shafts. For tunnels in rock, this should be a least 2.5 times the tunnel diameter (or the crown to invert dimension) below the invert.

[Amd GG2/01/2017]

Directional coring along the tunnel alignment should be considered. If this is to be carried out, it should preferably be done immediately on commencement of the detailed design

stage, in order to yield early data to maximise its benefit for the design. Despite the cost, the directional coring together with pumped down packer tests could provide useful information on the geology and hydrogeology along the tunnel alignment which could not be obtained from vertical or inclined boreholes. The information along the tunnel alignment would help to enhance the management of ground risks in tunnel excavation. [Amd GG2/01/2017]

For ground investigation to support the design of shafts, particular attention should be given to identifying poor ground conditions, which could lead to collapse, excessive ground deformation/vibration or excessive groundwater inflow/drawdown. For deep shafts with a significant length in rock, the ground investigation should assess the hydrogeology and inflow into the unlined sections of the rock mass, and the need for ground treatment and groundwater control works to prevent excessive drawdown of piezometric pressures in the rock and the soil overburden. [Amd GG2/01/2017]

For significant temporary works to be designed by the contractor, e.g. major ground treatment, groundwater control and ground support works, the pre-tender site investigation should provide sufficient geological and hydrogeological data for the pre-tender reference designs of such works, which should be carried out to adequately define the scope of the works required to meet the safety standards and the performance criteria specified. [Amd GG2/01/2017]

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**Geotechnical Engineering Office, Civil Engineering and Development Department  
The Government of the Hong Kong Special Administrative Region**

**GEO Technical Guidance Note No. 24 (TGN 24)  
Site Investigation for Tunnel Works**

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**1. SCOPE**

- 1.1 This Technical Guidance Note (TGN) provides guidance on site investigation (SI) for tunnel works in Hong Kong. It supplements guidance on site investigation given in Geoguide 2 (GEO, 1987) and Geoguide 4 (GEO, 1992). Any feedback on this TGN should be directed to the Chief Geotechnical Engineer/Mainland East.

**2. TECHNICAL POLICY**

- 2.1 The technical guidelines contained in this TGN were agreed by GEO's Geotechnical Control Conference (GCC) in December 2004.

**3. RELATED DOCUMENTS**

- 3.1 AGS (HK) (2004a). *Ground Investigation Guidelines 04.3 - Deep Excavations*. Association of Geotechnical and Geoenvironmental Specialists (Hong Kong).
- 3.2 AGS (HK) (2004b). *Ground Investigation Guidelines 04.4 - Rock Tunnels*. Association of Geotechnical and Geoenvironmental Specialists (Hong Kong).
- 3.3 AGS (HK) (2005). *Ground Investigation Guidelines 04.6 - Soft Ground Tunnelling*. Association of Geotechnical and Geoenvironmental Specialists (Hong Kong).
- 3.4 ETWB (2004). *Impossibility/Unforeseen Ground Conditions/Utility Interference (Environment, Transport and Works Bureau Technical Circular (Works) No. 17/2004)*. Environment, Transport and Works Bureau, Government Secretariat, Hong Kong.
- 3.5 GCO (1987). *Guide to Site Investigation, Geoguide 2*. Geotechnical Control Office, Hong Kong, 362p.
- 3.6 GEO (1992). *Guide to Cavern Engineering, Geoguide 4*. Geotechnical Engineering Office, Hong Kong, 156p.
- 3.7 GEO (2009a). *GEO Technical Guidance Note No. 5, Geoguide 2 - Guide to Site Investigation Updated Appendix B: Sources of Information*. Geotechnical Engineering Office, Hong Kong, 23p.
- 3.8 GEO (2009b). *Catalogue of Hong Kong Tunnels (up to December 2008)*. Geotechnical Engineering Office, Hong Kong.  
(<http://www.cedd.gov.hk/eng/publications/reference/doc/HK%20Tunnel%20Cat.pdf>)
- 3.9 IMMM (2003). *Ground Investigation Working Party - Final Report*. Institute of Materials, Minerals and Mining, Hong Kong Branch, 46p.

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- 3.10 ITA (2009). *General Report on Conventional Tunnelling Method*. International Tunnelling and Underground Space Association.  
(<http://www.ita-aites.org/cms/ita-aites-home/latest-news-detail/datum/2009/05/13/ita-report-online-copie-1.html>)
- 3.11 Sewell, R.J., Campbell, S.D.G., Fletcher, C.J.N., Lai, K.W. & Kirk, P.A. (2000). *The Pre-Quaternary Geology of Hong Kong*. Geotechnical Engineering Office, Hong Kong, 181p.
- 3.12 USACE (1997). *Engineer Manual 1110-2-2901 Engineering and Design - Tunnels and Shafts in Rock*. US Army Corps of Engineers.  
(<http://140.194.76.129/publications/eng-manuals/em1110-2-2901/toc.htm>)
- 3.13 USACE (2001). *Engineer Manual 1110-1-1804 Geotechnical Investigations*. US Army Corps of Engineers.  
(<http://140.194.76.129/publications/eng-manuals/em1110-1-1804/toc.htm>)

#### **4. DEFINITIONS**

- 4.1 Tunnel works comprise tunnels, shafts, caverns and associated underground facilities, however constructed.

#### **5. TECHNICAL RECOMMENDATIONS**

##### **5.1 GENERAL GUIDANCE**

- 5.1.1 Pre-tender SI should be as comprehensive as possible to provide adequate information for the design of tunnel works and contract preparation. In addition to the geological and hydrogeological conditions, the SI should identify utilities and buried installations to ascertain whether they will interfere with or be affected by the tunnel works (see ETWB TC(W) No. 17/2004 for government projects)
- 5.1.2 There are inherent uncertainties in the subsurface geology and hydrogeology, regardless of the extent of SI. Also, physical constraints, e.g. existing buildings and subsurface installations could limit the pre-tender SI for particular sections of tunnel works. Therefore, it is essential to make provision for additional ground investigation (GI) in the works contract to check and monitor continuously the actual conditions against those assumed, and to take measures to deal with conditions not anticipated but having significant impact on the design, construction, or on life and property.
- 5.1.3 The US Army Corps of Engineers Manual (USACE, 1997) includes a practical guide to the relative cost of SI as a proportion of the estimated construction cost. Based on this guide, the typical cost of SI for a deep tunnel located in difficult ground conditions and in a dense urban area is about 3-4% of the estimated construction cost. Notwithstanding, the cost of SI for a particular project depends greatly on the quality, suitability and adequacy of available information, and the data needed for the design and risk management of the types of tunnel works involved. The client should include adequate funding for SI in the project cost estimate.

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## **5.2 SITE INVESTIGATION STRATEGIES**

### **5.2.1 General**

- 5.2.1.1 SI for projects involving tunnel works should be phased. This approach is necessary as different phases of the project have different requirements. Also, the tunnel alignment and design requirements can change during route planning or design.
- 5.2.1.2 Using the data obtained at each phase, the impact of the proposed excavation method on the sensitive receivers identified and the geotechnical risks at each tunnel section should be assessed. The risk assessment should be reviewed when the tunnel alignment is fixed and as more information becomes available.
- 5.2.1.3 Some simple guidelines on SI for tunnelling are given in ITA (2009). An outline of the engineering considerations and SI techniques for rock tunnels, based on IMMM (2003), is given in Annex TGN 24A1. Supplementary information on ground investigation techniques is given in Annex TGN 24A2.

### **5.2.2 Planning Stage**

- 5.2.2.1 In the project planning stage, alternative tunnel routes and potential shaft locations are typically considered. It is sufficient to have only a general picture of the subsurface geology and hydrogeology, to define the preferred route corridor and to estimate the order of project cost. The SI should largely comprise desk studies and site reconnaissance, and include only limited GI, if any is needed. Reference should be made to information available from nearby tunnel projects (see, for example, the references given in GEO (2009b))

### **5.2.3 Preliminary Design Stage**

- 5.2.3.1 In the preliminary design stage, recommendations are made on a preferred tunnel alignment and the scope of works, including risk mitigation measures based on assumed methods of excavation. GI with a geophysical survey could be undertaken to refine the geological model, to gain additional information on significant geological features, identify sensitive receivers and to establish baseline conditions.
- 5.2.3.2 Boreholes should extend well below the anticipated depth of the tunnel and shafts to allow for any subsequent changes in the vertical alignment of the tunnel in the detailed design stage.
- 5.2.3.3 Soil permeability tests and Lugeon tests at close spacings should be undertaken in the boreholes to assess the soil mass and rock mass permeability, respectively. It is important not to overlook areas of apparently strong bedrock, as the mass permeability of these areas may be high and may affect significantly construction of the tunnel works. The test results should be used for development of the hydrogeological model, defining the hydraulic boundary conditions for the design and for assessing the need to control groundwater inflow/drawdown during construction.



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#### **5.2.4 Detailed Design Stage**

- 5.2.4.1 In the detailed design stage, when the tunnel alignment has been fixed, the main aim of the GI should be to obtain information for the reference design or detailed design of the tunnel works and the associated temporary works. The GI should also identify conditions at likely problematic areas along the chosen alignment. The GI data should be adequate for preparing the design of the ground support, ground treatment, groundwater control works and the risk mitigation measures. It should also be adequate for planning the inspection, testing and monitoring works during construction.
- 5.2.4.2 Where existing boreholes are found close to or intercepting the tunnel, the risk of these boreholes not properly grouted should be assessed and mitigation measures, where necessary, should be carried out to ensure that these boreholes would not form preferential flow paths that could jeopardize the tunnel construction.
- 5.2.4.3 New boreholes along the chosen tunnel alignment and shaft locations should generally extend to a sufficient depth below the invert of the tunnel/shafts to obtain information for the assessment of possible failure mechanisms/limit states, and/or construction of the tunnel/shafts. For tunnels in rock, this should be a least 2.5 times the tunnel diameter (or the crown to invert dimension) below the invert.
- 5.2.4.4 Directional coring along the tunnel alignment should be considered. If this is to be carried out, it should preferably be done immediately on commencement of the detailed design stage, in order to yield early data to maximise its benefit for the design. Despite the cost, the directional coring together with pumped down packer tests could provide useful information on the geology and hydrogeology along the tunnel alignment which could not be obtained from vertical or inclined boreholes. The information along the tunnel alignment would help to enhance the management of ground risks in tunnel excavation.
- 5.2.4.5 For GI to support the design of shafts, particular attention should be given to identifying poor ground conditions, which could lead to collapse, excessive ground deformation/vibration or excessive groundwater inflow/drawdown. For deep shafts with a significant length in rock, the GI should assess the hydrogeology and inflow into the unlined sections of the rock mass, and the need for ground treatment and groundwater control works to prevent excessive drawdown of piezometric pressures in the rock and the soil overburden.
- 5.2.4.6 For significant temporary works to be designed by the contractor, e.g. major ground treatment, groundwater control and ground support works, the pre-tender SI should provide sufficient geological and hydrogeological data for the pre-tender reference designs of such works, which should be carried out to adequately define the scope of the works required to meet the safety standards and the performance criteria specified.

#### **5.2.5 Construction Stage**

- 5.2.5.1 In the construction stage, further SI should be undertaken to obtain information to support the design review of the tunnels, caverns and shafts, in order to ensure that there is adequate safety margin and performance.



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- 5.2.5.2 For the exposed faces in tunnel works, the SI should include geological and engineering geological mapping, and an assessment of the tunnel sections/shafts using a soil/rock mass classification scheme on which the design may be based. A proforma for recording the rock mass mapping and classification data in rock tunnels is available from the Hong Kong Slope Safety Website under the downloading area at <http://hkss.cedd.gov.hk>.
- 5.2.5.3 Depending on the tunnel excavation method and the risk assessment, probing ahead of the tunnel excavation may be carried out. The penetration rate, the quantity of water inflows, and the colour and nature of cuttings and flushing water returns should be recorded. This information should be used to assess the ground conditions ahead, in particular the soil/rock interfaces and sections with potentially high water inflow, and the need for implementation of robust mitigation measures before further tunnel excavation. In addition to probing, use of non-invasive techniques and coring during construction may be considered where cost effectiveness can be demonstrated. For TBM works, further GI may be necessary prior to or during the TBM drive to confirm the locations of permeable soils and soil/rock interfaces and the variations in groundwater pressures for design.
- 5.2.5.4 Sufficient time should be allowed in the construction programme for the results of additional GI and site inspection and monitoring to be fed back into the design and risk management processes, in order that modifications to the design can be implemented or other contingency measures undertaken in a timely manner.

### **5.3 SOURCES OF INFORMATION AND EXPERTISE**

- 5.3.1 Reference should be made to Geoguide 2 (GCO, 1987), GEO Technical Guidance Note No. 5 (GEO, 2009a) and GEO (2009b) for general guidance on, and sources of information for SI and tunnels in Hong Kong. Reference should also be made to Geoguide 4 (GEO, 1992), which contains guidance on SI for cavern schemes, much of which is also applicable to tunnels and shaft construction.
- 5.3.2 Information on the pre-Quaternary geology of Hong Kong is given in Sewell et al (2000). The Hong Kong Geological Survey (HKGS) section of GEO/CEDD has the most detailed information on the geology of Hong Kong and offers an advisory service. HKGS should be consulted, especially at the planning stage of new projects involving tunnel works, in the formulation of geological models, anticipation of difficult areas, and the verification of significant geological features (faults, dykes, contact zones between geological units, etc.). This consultation process in actual projects also allows feedback of important geological information from the project to existing geological archives maintained by HKGS.

### **5.4 DOCUMENTATION**

- 5.4.1 Factual engineering geological and hydrogeological data relating to the project should be fully documented including any field data obtained from the excavation faces or inferred from the equipment/processes adopted for the tunnel works.
- 5.4.2 Survey and monitoring reports should include factual data, details of the survey and monitoring methods, and equipment/system calibration.

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- 5.4.3 Interpretative engineering geological and inspection and monitoring reports should be prepared using the data obtained during the various phases of the SI and from construction records. These reports should update any previous relevant interpretative reports and be presented in a form that will meet the needs of the professional users. They should incorporate information on the cavern/tunnel/shaft excavation method and working sequence, trends of key performance indicators and records of actual impacts observed during construction.

## **6 ANNEXES**

Annex TGN 24A1	Outline of Engineering Considerations and SI Techniques for Rock Tunnels
Annex TGN 24A2	Supplementary Information on Ground Investigation Techniques

( R K S Chan )  
Head, Geotechnical Engineering Office

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Table 1: Outline of Engineering Considerations and SI Techniques for Rock Tunnels (based on IMMM, 2003)

MAJOR ENGINEERING CONSIDERATIONS	KEY POINTS FOR SI	APPROACH TO INVESTIGATION	TESTING	SURVEY / MONITORING
<p>Blasting design</p> <p>Machineability (suitability for TBM)</p> <p>Soil and rock mass excavation and support design (possibility of presence of mixed face conditions, fractured ground, and weak, compressible and/or permeable zones)</p> <p>Water pressures acting on lining /retaining structures for their design</p> <p>Potential water inflow into the shafts and along the tunnels.</p> <p>Assessment of tunnels/shafts drainage and pumping requirements</p> <p>Effects of the tunnel works on land stability, e.g. ground collapse/landslide due to inadequate support, hydraulic failure, blow-out failure, etc.</p> <p>Ground settlement, heave and lateral movement and distortion of sensitive receivers as a result of construction-induced ground loss, ground deformation/vibration and groundwater inflow/drawdown</p> <p>Design of tunnel portal slopes</p> <p>Lining/retaining structure durability design</p> <p>Effects of blasting on surface/subsurface facilities and slopes</p>	<p>Nature of soil and/or rock at tunnel level (invert and crown) and around the tunnels, and around/within the shafts</p> <p>Rock mass weathering (including presence of corestones and mixed ground) and strength</p> <p>Distribution, orientation and characteristics of discontinuities</p> <p>Rock mass permeability</p> <p>Insitu stress</p> <p>Presence of fault zones, dykes, contact zones between geological units, etc.</p> <p>Hydrogeology, including permanent groundwater table, perched water tables, permeable zones feeding water to the tunnels, etc.</p> <p>Potential recharge in response to rainfall and the sea, and hydraulic boundary conditions</p> <p>Dewatering effects of the tunnels, and the tunnel works damming subsurface groundwater flow</p> <p>Nature of surface materials, in particular, strength, permeability, compressibility and consolidation and creep characteristics</p> <p>As-built records and site history, in particular, effects of past and on-going construction activities that could affect the tunnels/shafts and the sensitive receivers</p> <p>Ground and groundwater chemistry</p>	<b>Investigation Methods</b>	<b>Insitu Testing</b>	<b>Instrument Types</b>
		Geological mapping of surface rock exposures	Impression packer test, televiewer	Piezometers for monitoring pore water pressures at various hydrogeological response zones
		Aerial photograph interpretation to identify photolineaments	Packer permeability test and possibly pumping test	Settlement gauges
		Geophysical surveys to identify anomalies and low seismic velocity zones	Insitu stress measurement (e.g. by hydrofracturing)	
		Boreholes – vertical holes needed for sampling and downhole tests. Unless surface materials need to be characterised for assessment of effects of the tunnel works, boreholes can be wash-bored down to the zone of interest	Soil permeability test and response test in piezometer	
		Sub-horizontal/inclined holes from the tunnel portal and/or shaft locations to examine variations of ground conditions along the tunnel drive		
		Inclined holes to intercept faults, dykes and contact zones at tunnel level		
		Probing ahead during tunnelling operation		
		Directional coring (for deep tunnels)		
		<b>Sampling</b>	<b>Laboratory Testing/Analysis</b>	<b>Survey / Monitoring</b>
		Rock coring through proposed tunnel levels (including all alternative alignments) and covering sufficient ground above crown and below invert	Unconfined Compressive Strength Young's Modulus Poisson's Ratio Point Load Strength Rock joint characteristics Abrasiveity Hardness Geological thin sections	Location survey of physical constraints and sensitive receivers
		Undisturbed soil samples for near-surface materials, potentially affected by the tunnel and shaft construction	Classification and consolidation creep tests for settlement-susceptible near-surface materials	Complete annual cycle needs to be monitored to indicate groundwater pressure response to rainfall and seasonal fluctuation, and to recharge from the sea
			Salinity testing to assess the effects of groundwater on tunnelling equipment and lining	Baseline ground movement and vibration survey and condition survey of sensitive receivers (e.g. cracks on existing structures) over a sufficiently long period to establish trends

NB: Reference should also be made to the ground investigation guidelines for deep excavations and rock tunnels produced by AGS (HK) (2004a & b; 2005).

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**SUPPLEMENTARY INFORMATION ON GROUND INVESTIGATION TECHNIQUES**

**1. GEOPHYSICS**

- 1.1 Non-invasive surveying methods using geophysics techniques are comparatively inexpensive compared with invasive GI. Furthermore, they can often be completed within a short time, without major conflict over land use, and can cover large areas.
- 1.2 Magnetic surveys to identify faults have been successful in offshore areas in Hong Kong (Sewell et al., 2000 and references therein). Confirmatory boreholes and insitu testing should be carried out to verify the interpretation obtained from the survey.
- 1.3 Geophysical surveys do not provide direct measurement of engineering properties such as strength and permeability. They may not detect small-scale geological features. The interpretation and translation of the survey data into engineering geological information requires expertise and professional judgement.

**2. VERTICAL AND INCLINED BOREHOLES**

- 2.1 Although vertical boreholes are the most commonly used method of GI, the samples and logging obtained may only indicate very localised characteristics of the ground along a tunnel alignment.
- 2.2 Inclined boreholes may give comparatively more information along the tunnel alignment than vertical boreholes. Where the orientation of suspected subvertical fault zones or other significant geological features is known, targeting an inclined borehole in a direction roughly perpendicular to the feature may give a useful indication of the location, overall thickness and engineering properties of the feature.
- 2.3 The relative inclinations of the borehole and the feature being investigated govern the success of the inclined borehole. Faults in Hong Kong are commonly discontinuous and typically have variable dip, dip direction, width and weathering characteristics. These factors may affect the effectiveness of inclined boreholes.

**3. HORIZONTAL BOREHOLES**

- 3.1 Drilling of horizontal boreholes can be carried out either from the excavation face, an intermediate shaft or from the other end of the tunnel to investigate the ground conditions, in particular to check whether suspected features of poor ground are present and if so their nature and extent.
- 3.2 There are limitations to the maximum length that the horizontal borehole can be driven, depending on the ground conditions, the size of the hole and the power of the drilling rig. 'N' and 'H' size cores have been obtained from an 800 m long hole in Hong Kong.
- 3.3 Drilling of a horizontal borehole during the planning and design stage is often not feasible due to lack of access to the tunnel level; usually, for deep tunnels, the construction of vertical access shafts will not have commenced at this stage.

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- 3.4 During the construction stage, drilling of horizontal boreholes from the tunnel face can affect the rate of progress of the excavation; hence alternative access points should be investigated and the cost-effectiveness of the operation needs to be carefully assessed in the light of the adequacy of ground data for the design and risk management.

**4. DIRECTIONAL CORING TECHNIQUES**

- 4.1 Directional coring techniques are now available to drill from ground level to great depth and then along a horizontal alignment. This method does not require provision of working space at the tunnel level and can be very useful for investigating deep tunnels.
- 4.2 These techniques could provide continuous information of the geological conditions along the alignment of a tunnel. Insitu tests could also be carried out for assessing the actual conditions of the ground to be excavated. The information along the alignment would minimize uncertainty of the tunnel works and enhance the management of risks for the project.
- 4.3 There may be limitations as to the maximum depth and length that a directional corehole can reach as well as the type of core samples that can be taken and the type of geotechnical tests that can be performed. These matters, as well as drilling location accuracy, cost, mobilisation considerations and drilling rate should be examined as early as possible in a tunnel project.

**5. OTHER ASPECTS**

- 5.1 To avoid creating preferential flow paths and obstructions in the ground that could pose hazards to the tunnel excavation, for boreholes that are close to or intercept the tunnel, the person supervising the GI should ensure that all metal casings are removed and the boreholes are properly grouted after completion of sampling and testing.
- 5.2 For long boreholes, probe holes and core holes, the position of which could impact on the design and construction, the specification should require the orientation (dip and dip direction) and the position of the holes to be checked regularly as drilling progresses to ensure that they follow the intended alignment.

**CHAPTER 5****CONTRACT DOCUMENTS**

**The parts of the PAH shown in blue and bold should only be updated by Works Branch of Development Bureau.**

<b>Rev</b>	<b>Issue Date</b>	<b>Amendment Incorporated</b>
First Issue	December 2016	NA
1	27 February 2017	Amd No. 1/2017
2	25 August 2017	Amd No. 3/2017
3	19 December 2017	Amd No. 5/2017
4	16 July 2017	Amd No. 2/2018

- (h) General Specification (GS) (see Paragraph 6.1),
- (i) Particular Specification (PS) (see Paragraph 6.2),
- (j) Standard Method of Measurement (SMM),
- (k) Particular Preambles (if any),
- (l) Bills of Quantities (BQ) (see Paragraph 7.1)
- (m) Drawings (see Paragraph 8.1), and
- (n) Any relevant pre-contract correspondence with the Contractor (e.g. tender addendum, circular letters to tenderers) (see Paragraphs 5.2, 6.14.4, 7.2.1, 7.3, 7.6 & 8.1.1 of PAH Chapter 6).

Usually, only documents (d) to (n) listed above, the letter of acceptance of the tender and the Articles of Agreement form the contract documents (see Paragraph 8.1.1 of PAH Chapter 6).

The type or edition of document used shall be the current version as promulgated by DEVB TCWs or other appropriate circular. Reference should also be made to the current corrigenda issued to the GS and the SMM (see Paragraph 5.2 of PAH Chapter 6).

### **1.3 CONSISTENCY AMONGST DOCUMENTS**

Care should be taken to avoid any ambiguities or discrepancies in the documents which form a contract as contractual claims and disputes are often caused by inconsistencies in or between the documents. If any ambiguities or discrepancies exist, it should be noted that the provisions of the SCC prevail over those of the GCC, which in turn prevail over the PS and the Drawings, which in turn prevail over the GS. GCC Clause 5(1) and GS Clause 1.01 are relevant in this aspect.

In the drafting of SCC or PS clauses, reference should be made whenever appropriate to the GCC and the GS, using phrases such as:

- (a) “Pursuant to General Conditions of Contract Clause .....”, or
- (b) “GS Clause ..... is deleted and replaced by .....” etc.

### **1.4 COMMENTS ON DOCUMENTS BY CONTRACT ADVISERS**

The responsibility for ensuring that tender documents are properly prepared rests with the professional officers handling the project. They may however seek advice from Contract Advisers on tender documents when genuine doubts emerge. When seeking such advice the officer concerned shall inform the Contract Adviser of the doubts he has and the aspects of the case on which he wants advice (see Paragraph 1.5.1 of this Chapter).



## **1.5 LEGAL VETTING OF TENDER DOCUMENTS**

### **1.5.1 Contracts Estimated to Exceed \$300M**

All tender documents for contracts estimated to exceed \$300M in value must be submitted through the appropriate Contract Adviser to the Legal Advisory Division (Works) of DEVB (LAD(Works)/DEVB) for legal vetting prior to calling for tenders. Before submission to LAD(Works)/DEVB, it is advisable to request the relevant Contract Adviser to comment on the documents. Comments made by the relevant Contract Adviser on the draft should be attached for LAD(Works)/DEVB's information.

The tender documents to be submitted shall include the following:

- (a) Special Conditions of Tender,
- (b) Form of Tender and Appendix thereto (if these have been altered from the standard version shown at Appendix 5.1),
- (c) Articles of Agreement (if these have been altered from the standard printed version),
- (d) Special Conditions of Contract,
- (e) Particular Specification, and
- (f) Bills of Quantities, including General and Particular Preambles.

A memo shall accompany the tender documents, drawing attention to the following:

- (a) SCT clauses and SCC clauses together with reasons for their incorporation,
- (b) alterations, if any, to the standard versions of the Articles of Agreement and the Form of Tender and Appendix thereto, and
- (c) any clause in the PS, any item in the BQ, or any other matter relating to the tender documents or to the Contract which may have significant contractual or financial implications.

LAD(Works)/DEVB will consider these documents (retaining a copy for future reference) and may recommend amendments they consider advisable to the works division/regional office concerned, who should incorporate such amendments as necessary into the documents before calling for tenders. The vetting by LAD(Works)/DEVB will take at least three weeks and provision should be made in the programme for tender preparation.

If owing to urgency, or some other reasons, the documents cannot be submitted through Contract Adviser then the reason for the same should be explained in the covering memo to LAD(Works)/DEVB. However, action should then be taken to forward the comments made by Contract Adviser as soon as they are received.



**1.5.2 Design and Build Contract**

The Administrative Procedures issued under DEVB TCW No. 4/2015 should be followed as closely as possible. In particular, the procedures laid down in the “Guidance Notes on the Preparation of the Employer’s Requirements” (Appendix C of the Administrative Procedures) should be followed in order to avoid any unnecessary design changes after the contract is awarded. Prior approval of DEVB shall be obtained if the Procedures are not to be followed because of special consideration given to individual cases. The legal vetting requirement as described in Paragraph 1.5.1 applies equally to design and build contracts. The Administrative Procedures can be found on the DEVB website (under Publications and Press Releases\Publications\Standard Contract Documents\).

## 7.2 PREPARATION OF BILLS OF QUANTITIES

- General and Particular Preambles
- Bill No. 1 : Preliminaries
- Bill No. 2 : ) for works items,  
) see guidance below.
- Bill No. : )
- Bill No. : Site Safety and Environmental Management <sup>\*(a)</sup>
- Bill No. : Daywork
- Bill No. : Prime Cost and Provisional Sums
- Grand Summary.

Separate bills may be considered, at the discretion of the project engineer, for work items charged to different financial votes. When a lump sum form of contract is used, the provisional quantities are included in the Bills wherever it is appropriate and sensible to do so. Individual items to be remeasured can be mixed in with the “firm” items, or a whole section can be shown separately and described as provisional. The items in each bill should be grouped into the appropriate section of Part V of the SMM in the order shown. A sample for the Grand Summary is given at Appendix 5.5.

Specimen BQ items provided in DEVB TCWs for various subjects such as site cleanliness and tidiness, preservation and protection of preserved trees, Professional Indemnity Insurance for the Works. etc. should be adopted where applicable.

All works items should be included in the BQ and omitted items should be minimized as far as practicable. The BQ should undergo a checking process to ensure the completeness and accuracy of the BQ and elimination of major errors. This would facilitate competitive tendering, reduce resources for valuation of omitted items and minimize the disputes arising from the valuation of omitted items. (Audit Report No. 53 Ch. 3 - [http://www.aud.gov.hk/pdf\\_e/e53ch03.pdf](http://www.aud.gov.hk/pdf_e/e53ch03.pdf))

### 7.3 PREAMBLES TO THE BO

A set of standard clauses for the “General Preambles to the Bills of Quantities” is

**CHAPTER 6****TENDER PROCEDURE**

The parts of the PAH shown in blue and bold should only be updated by Works Branch of Development Bureau.

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First Issue	December 2016	NA
1	29 May 2017	Amd No. 2/2017
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3	16 May 2018	Amd No. 1/2018
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### **3.8 LANGUAGES TO BE USED FOR TENDER SUBMISSIONS**

Article 9 of the Basic Law stipulates that “in addition to the Chinese language, English may also be used as an official language by the executive authorities, legislature, and judiciary of the Hong Kong Special Administrative Region”. It is therefore inappropriate to state in the tender notices and tender documents that tenders should be submitted in English.

### **3.9 MINIMUM WAGE REQUIREMENTS**

The former S for Tsy in his memo ref. (6) in FT 53/88/2 dated 28.2.2000 announces that departments should not stipulate minimum wage requirements in their tender exercises. If departments would like to secure quality services, more effective means should be used, e.g. by specifying in detail the qualifications, experience, training and skills required of the personnel concerned; requesting tenderers to provide references from their previous clients; or using a marking scheme for tender evaluation. Nevertheless, if a department really considers it essential to stipulate minimum wage requirements in a particular tender exercise, it should make a submission with full justifications to the Central Tender Board for prior approval (i.e. before tendering). This will prevent the need to cancel the tender exercise if the Board is not satisfied with the justifications provided.

### **3.10 NOT USED**

### **3.11 MAXIMUM NUMBER OF CONTRACTS TO BE UNDERTAKEN BY THE SAME CONTRACTOR**

There are occasions when procuring bureaux/departments invite tenders for more than one contract in a tender exercise and impose a restriction on the maximum number of contracts each tenderer may secure. Some procuring bureaux/departments have also imposed a restriction on the maximum number of a particular type of contracts (which may be tendered out at one go in the same tender exercise or separately in different tender exercises) that a contractor can undertake simultaneously. SFST in his memo ref. FT 53/88 Pt. 3 dated 18.11.2004 required Controlling Officers to revisit the need and justification for setting such a restriction. In particular, for tendering of contracts covered by WTO GPA, the procuring bureaux/departments should ensure that such restriction is legally in order and seek legal advice when necessary if they wish to impose such a restriction.

### **3.12 CONTROL OF OMITTED ITEMS AND SUBSTANTIAL CHANGES IN QUANTITIES**

To avoid the occurrence of omitted items and substantial changes in quantities during construction, the following quality assurance procedures should be adopted:-

- (a) In general, the Standard Method of Measurement (SMM) should be followed in the preparation of the BQ. If it is necessary to amend the method of measurement, a Particular Preamble (PP) to that effect should be prepared and included in the BQ in accordance with Rule 10 in Part III of the SMM. Prior approval for the incorporation of the PP (for any method of measurement

which deviates from the SMM), as well as any drawings clarifying or defining the method of measurement, should be obtained from an officer at D1 rank or above administering the contract according to Section 7.1 of Chapter 5. Such request and approval must be properly minuted and documented in the project file for future reference. Besides, the project officer should confirm such modified method of measurement in writing with the officers responsible for the preparation of the BQ, in case the PP and the BQ are prepared by different officers. Close liaison between the design team and the taking-off team should be maintained to ensure mutual understanding of the documents and any changes made to the SMM.

- (b) A pre-tender cross-checking procedure should be introduced in the preparation of BQ. An officer in the rank of engineer, quantity surveyor, senior engineer, senior quantity surveyor or other equivalent professional ranks, not being the officer who actually prepared the quantities, should make a bulk checking on the quantities of the cost-significant items (items which carry significant implication on contract expenditure) in the BQ against the tender drawings/specifications, or against the quantity of other related items (i.e. items with quantities comparable to or bearing a well recognized ratio to the quantities of the items being checked) to identify possible omitted items and problems arising out of substantial changes in quantities. Examples of 'bulk checking' are (i) volume of excavation against volume of soil disposal and deposition; (ii) area of formwork wall against area of wall tiles; and (iii) number of moving of piling rig against the total number of piles shown in the drawings, etc. When drawing up a list of the cost-significant items, the concerned officer should take into consideration the nature and size of the works, the value of the items and the likelihood of future changes to the relevant items. Sufficient time should be allowed to conduct the bulk checking. Any mistake/problem identified in the checking process should be rectified before the issue of tender documents.
- (c) The above procedures have been prepared mainly for those projects administered by in-house project team. For those projects administered by Consultants, the Consultants shall be required to adopt similar procedures to ensure the quality of BQ and PP and submit their proposed procedures to the Director's Representative for agreement. Besides, if resources permit, project office should conduct spot-checking on the quantities of some selected cost significant items after the BQ has been prepared by the Consultants. Such spot-checking conducted by the project office should be properly documented.
- (d) Apart from the above, an officer of the project office at a rank not lower than D1 should chair a meeting to vet the BQ and PP prepared and to ensure all the checking and cross-checking procedures have been duly completed and documented. For those projects administered by the Consultants, the Consultants shall assign one of their senior managers to attend the meeting.

No tender invitation should be carried out without undergoing the above procedures. Similar review and approval procedures should also be adopted for any subsequent changes made by tender addenda, subject to the need for a formal meeting required in (d) above to be decided by the chairman.

**CHAPTER 5****CONTRACT DOCUMENTS**

**The parts of the PAH shown in blue and bold should only be updated by Works Branch of Development Bureau.**

<b>Rev</b>	<b>Issue Date</b>	<b>Amendment Incorporated</b>
First Issue	December 2016	NA
1	27 February 2017	Amd No. 1/2017
2	25 August 2017	Amd No. 3/2017
3	19 December 2017	Amd No. 5/2017
<u>4</u>	<u>16 July 2017</u>	<u>Amd No. 2/2018</u>

## SYNOPSIS

This Chapter provides a handy reference to the various standard documents, forms and information that are regularly used in the preparation of contract documents for civil engineering works. In some cases, standard forms and exact wording to be included in contract documents are reproduced in the Chapter. However, where a printed version of a standard document is available or where the information is contained in a well-known document, the Chapter makes reference to such documents or source rather than reproducing them. Standard documents referred to in this Chapter should be of the latest editions of the General Conditions of Contract for Civil Engineering Works, Standard Method of Measurement for Civil Engineering Works, General Specification for Civil Engineering Works, Sub-contract Articles of Agreement and Conditions for Civil Engineering Works, Contractor Management Handbook and Construction Site Safety Manual. The information in this Chapter would also be useful in the preparation of documents for term contracts.

A contract for civil engineering construction is a very complex legal document containing several inter-related documents each of which plays an important role in defining the obligations and responsibilities of the parties concerned or in providing information on the works to be constructed. It is therefore essential that the contract documents for each contract are prepared with great care and by an experienced professional who has thorough knowledge of the works to be constructed. The documents forming a contract must be scrutinized for comprehensive coverage, accuracy and consistency with one another before tenders are invited.

香港特別行政區政府

The Government of the Hong Kong Special Administrative Region

政府總部  
發展局  
工務科

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Works Branch  
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Hong Kong

Ref : DEVB(W) 430/80/01  
Group : 2, 5, 6

1 December 2017

Development Bureau  
**Technical Circular (Works) No. 7/2017**

**Adoption of Building Information Modelling  
for Capital Works Projects in Hong Kong**

**Scope**

This Circular sets out the policy and requirements on the adoption of Building Information Modelling (BIM) technology.

2. This Circular applies to works either by in-house government staff, consultants or contractors.

**Effective Date**

3. This Circular takes effect on **1 January 2018**.

**Effect on Existing Circulars and Circular Memoranda**

4. This Circular has no effect on existing circulars.



## **Background**

5. In its meeting in April 2013, Works Policies Coordination Committee (WPCC) endorsed the proposal to adopt an incremental strategy in using BIM in public works projects. Pilot projects with relatively complex building and/or structural works, and of different nature (such as water/sewage treatment plant, various building projects, etc.) were to be selected for trial with a view to obtaining more information on the performance of the technology in public works projects in various aspects.

6. In 2014, WPCC endorsed the proposal to promote wider use of BIM in different stages of public works projects of any nature, scale or complexity and explore the use of BIM for asset management so as to enable staff of Works Departments (WDs) from senior management to frontline staff to appreciate the benefits of the technology and acquire the hands-on experience.

7. Under the endorsed proposal, WDs should continue to provide training to their staff from introductory level to advanced level for smooth delivery of pilot projects and to establish a pool of colleagues capable of building up and administering BIM models.

8. The Government is firmly committed to the promotion and adoption of BIM technology in capital works projects with a view to enhancing the design, construction, project management, asset management and improving the overall productivity of the construction industry. The 2017 Policy Address has stated that Government will actively seek to require consultants and contractors to use this modelling technology when undertaking design of major government capital works projects from 2018 onwards. This Circular sets out the details of this Policy Address initiative.

## Policy

9. Capital works projects with project estimates more than **\$30 Million**<sup>1</sup> shall use BIM technology. The policy is applicable for projects in the investigation, feasibility, planning, design or construction stages in the Capital Works Programme irrespective of the modes of delivery as detailed in the ensuing paragraphs. For entrustment works, subvented capital works projects and works that are undertaken by private parties but will be handed back to the Government for maintenance, the BIM adoption policy is covered in paragraph 16.

## BIM Adoption for Government Projects

### Investigation, Feasibility and Planning Stage

10. Sometimes a detail information model may not be required at the early stage of a project or has little reference value at subsequent stages. Thus the use of BIM is **optional** for projects in the investigation, feasibility study and planning stage. However WDs should critically review the project technical and information requirements, and if there is benefit of using BIM at this stage, it can be so used.

### Design Stage

11. All projects to be designed under Design and Construction consultancy agreements (DC) or Investigation, Design and Construction consultancy agreements (IDC) with technical and fee proposals to be invited on or after 1 January 2018, and all in-house projects submitted in 2017 CWRAE at Cat B- status, the use of BIM technology is **mandatory**.

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<sup>1</sup> Project estimate data recorded in the FSTB Capital Works Expenditure database.

12. Existing Cat B- projects with construction work tenders to be invited before 1 January 2019, the use of BIM is **optional** in the design stage. For other existing Cat B- projects, the use of BIM in the design stage is **mandatory**<sup>2</sup>.

#### Construction Stage

13. All construction works contracts with tender to be invited on or after 1 January 2018 shall use BIM. For contracts that do not adopt BIM in the design, the use of BIM shall at least cover the requirement for an as built BIM model.

14. For the avoidance of doubt, this requirement applies also to Design-Build and Design-Build-Operate projects.

#### **Asset Management**

15. In addition to enhance productivity and reduce risks and costs of our capital works projects, BIM technology can also optimize operation and maintenance. The development of this branch of the technology is fast and handover of information models for operation and maintenance becomes standard practice. WDs should critically review their departmental asset management strategy in order to leverage the technology to enter into the digital built environment.

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<sup>2</sup> If detail design for a project has commenced and change to adopt BIM uses may causes substantial delay, WDs may apply exemption from Heads of WDs.

## **BIM Adoption for Entrustment Projects, Subvented Projects and Private Projects to be Handed Over to Government**

16. This BIM technology adoption policy is also applicable to entrusted project within Government departments. For projects entrusted to organizations outside Government (Airport Authority, MTR Corporation Limited, private developer etc.), subvented projects and private projects to be handed over to Government, the scope of BIM implementation should be aligned with the BIM adoption/implementation policy of the organisations. However, WDs shall encourage these organizations to use BIM technology as far as practicable.

## **Mandatory BIM Uses**

17. A number of mature BIM uses have been identified and a list of mandatory and optional BIM uses in **Annex 1** should be implemented in capital works projects. To keep up with the fast BIM technology development, the BIM uses in works projects will be reviewed and updated from time to time.

## **Exemption**

18. On exceptional grounds such as serious contractual implications, substantial impact on project delivery or projects of little technical content<sup>3</sup>, the Heads of WDs may exempt the adoption of BIM technology as required under this Circular. WDs shall appropriately keep records on the approvals for exemptions with detailed justifications.

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<sup>3</sup> Project's main scope of work has little technical content such as operation of public fill banks, paving and painting works, slope maintenance works, greening works, maintenance works under term contracts and procurement of vehicles.

## **Contractual Requirements**

19. Contractual provisions adopted in pilot projects may continue to be used until advised otherwise. To cater for cases where small consultant or contractor firms may not be very well equipped with BIM expertise, provisions will be stipulated in the agreement or contract allowing the consultant or contractor to engage BIM sub-consultant or sub-contractor to assist them. The agreement or contract shall also contain terms requiring the consultant or contractor to train up a number of staff of the employer/their staff and their sub-consultant/sub-contractor staff during the assignment. As the Construction Industry Council (CIC) has reserved a total of about 380 BIM training places of different levels<sup>4</sup> in year 2018 for WDs to allocate to their consultants/contractors successfully awarded the Agreements/Contracts, the additional training requirement should also be included. Sample provisions for these requirements are enclosed in **Annex 2** for reference. CIC training provisions for 2019 and onwards will be updated separately by Circular Memoranda.

## **Enquiries**

20. Enquiries on this Circular should be addressed to Chief Assistant Secretary (Works) 4.

**( C K HON )**

**Permanent Secretary for Development (Works)**

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<sup>4</sup> The CIC will provide BIM basic modelling courses and BIM discipline-specific advanced modelling courses of about 380 training places in 2018. These training places will be allocated by WDs free of charge to a limited number of staff of the consultants and contractors and to be approved by the Director/Engineer.

**BIM Uses**

1. Works Departments shall adopt the stipulated mandatory BIM uses in respective stages of a project. Works Departments may adopt the optional BIM uses as and when necessary.

	<b>BIM Use</b>	<b>Investigation, Feasibility and Planning</b>	<b>Design</b>	<b>Construction</b>
1	Design Authoring	O	M	M
2	Design Reviews	O	M	M
3	Existing Conditions Modelling	O	O	M
4	Site Analysis	O	M	
5	3D Coordination		M	M
6	Cost Estimation	O	O	O
7	Engineering Analysis		O	O
8	Facility Energy Analysis		O	O
9	Sustainability Evaluation	O	O	O
10	Space Programming	O	O	
11	Phase Planning (4D Modelling)		O	M
12	Digital Fabrication		O	O
13	Site Utilization Planning			O
14	3D Control and Planning			O
15	As-Built Modelling			M
16	Project Systems Analysis			O
17	Maintenance Scheduling			O
18	Space Management and Tracking			O
19	Asset Management			O
20	Drawing Generation (Drawing Production)		M	M

Legend:

M – Mandatory BIM Use for the mentioned stage, including that carried forward from previous stage.

O – Optional BIM Use

2. Explanations of each of the above BIM use shall be referred to the latest version of the BIM Project Execution Plan of the Construction Industry Council or that of the Penn State (<http://bim.psu.edu/uses/>), if it cannot be found in the former document.

**Organization, Training and Sub-contracting Requirements**

**BIM Team Structure**

The Consultant/Contractor\* shall propose and establish a BIM team that are appropriate for the scale and complexity of the Assignment/Contract\*, highlighting key roles and responsibilities of each position, within [14] calendar days after commencement of Assignment/Contract\*. The team shall be led by a BIM team leader who holds a key position in the Consultant/Contractor's\* project team structure. The BIM team shall include sufficient and technically competent resources in order to complete all BIM tasks and deliverables specified in the Assignment/Contract\*. Notwithstanding, the BIM team shall at least comprise [3] staff well trained in relevant disciplines. The BIM team leader shall either have corporate membership of an appropriate professional institution or shall have [5] years relevant post-qualification experience plus university degree or equivalent in an appropriate engineering discipline. The BIM team leader shall have a minimum of [3] years of practical experience in management of BIM projects or a professional member of the Hong Kong Institute of Building Information Modelling (HKIBIM) or equivalent. The disciplinary BIM coordinators shall have [3] years related construction project experience. The coordinators shall have a minimum of [1] year practical experience in BIM projects or an associate member of the HKIBIM or equivalent.

The BIM team leader shall be responsible for the overall BIM managements and process controls. The BIM team leader shall delegate BIM coordinator(s) for handling BIM tasks such as BIM modelling, collaborate information exchange amongst related stakeholders and maintain a drawing/information register to record the information to be incorporated in the model(s).

For any proposed staff movement or change in the BIM team, the Consultant/Contractor\* shall provide a CV of the replacement personnel together with evidence of equivalent BIM competency to the Director/Engineer\* within [7] calendar days for approval.



### **BIM Sub-Consultant/Sub-Contractor\***

If the Consultant/Contractor\* does not have the necessary expertise, the Consultant/Contractor\* shall engage a sub-consultant/sub-contractor\* with suitable expertise for the performance of BIM related tasks. If the Consultant/Contractor\* intends to or is required to sub-contract the BIM works to a BIM sub-consultant/sub-contractor\*, the Consultant/Contractor\* shall obtain approval from the Director/Engineer\* before formal engagement and shall indicate this clearly in the project team structure. The positions of the staff members from the BIM sub-consultant/sub-contractor\* shall also be indicated clearly in the BIM team organisation structure.

### **Additional BIM Training Requirements for Courses Offered by the Construction Industry Council**

The Consultant/Contractor\* is required to nominate his staff or sub-consultant/sub-contractor\*'s staff to attend, within [6] months from the commencement of the Assignment/Contract\*, training courses organised by the Construction Industry Council as follows:

- [4]#staff members to attend the Building Information Modelling Basic Modelling Courses and
- [4]#staff members to attend the Building Information Modelling discipline-specific Advanced Modelling Courses.

The Consultant/Contractor\* shall liaise with the Construction Industry Council for the schedule of the above courses and shall obtain necessary approval of the nomination from the Director/Engineer\* before the commencement of the training courses.

\* Delete as appropriate

# Number will depend on the actual number of assignments/contracts awarded in a year and is subject to change.

(This may not be the latest version as in the CNPIS which is updated from time to time)

CONSULTANTS PERFORMANCE REPORT											
Part II - Detailed Assessment of Performance											
Item	Aspects of Performance	VG	G	S	P	VP	NA	Max. Score	Applicable Max. Score	Consultant's Score	Weighted Score
A.	<b>Stage Assessment</b>										
1	<b>Feasibility / Investigation Stage (EACSB) or Workstage 1/2 (AACSB)</b>										
1.1	<b>Recommendations</b>										
(a)	Quality of recommendation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	8	0	0	
(b)	Technical consideration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	7	0	0	
(c)	Consideration of environmental friendliness, energy efficiency, health & safety, and life cycle costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	5	0	0	
(d)	Consideration of alternatives and innovative ideas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	7	0	0	
1.2	Consultation and public engagement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	4	0	0	
1.3	Cost estimates & quality of reports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	9	0	0	
	Stage period : <input type="text"/> month(s)							40	0	0	0
2	<b>Design and Contract Stage (EACSB) or Workstage 3/4 (AACSB)</b>										
2.1	<b>Design solutions</b>										
(a)	Quality of design	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	8	0	0	
(b)	Technical consideration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	6	0	0	
(c)	Consideration of environmental friendliness, energy efficiency, health & safety, and life cycle costs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	5	0	0	
(d)	Consideration of alternatives and innovative ideas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	3	0	0	
2.2	Consultation and public engagement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	3	0	0	
2.3	Cost estimates & quality of tender documents/drawings (Note 5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	10	0	0	
2.4	Tender assessment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	5	0	0	
	Stage period : <input type="text"/> month(s)							40	0	0	0
3	<b>Construction Stage (EACSB) or Workstage 5/6 (AACSB)</b>										
3.1	Supervision of contractors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	10	0	0	
3.2	Administration of contracts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	6	0	0	
3.3	Recruitment, supervision and administration of site staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	6	0	0	
3.4	Financial control of contracts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	5	0	0	
3.5	Certification of interim payments/final accounts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	5	0	0	
3.6	Handling of contractor's claims	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	4	0	0	
3.7	Provision of record drawings/manuals/other records	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	4	0	0	
	Stage period : <input type="text"/> month(s)							40	0	0	0

Consultation materials	Consultation materials including presentation materials, models, animation, drawings, plans and figures which are legible, appealing to the readers, allowing the readers to visualize conceptual schemes proposed and in layman's terms which are also suitable for the general public
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The assessment should be based on the consultants' performance in the process of consultation and public engagement, i.e. whether the consultant has diligently considered all stakeholders' views and come up with balanced recommendations/design solutions. The assessment on consultants' performance should not be based only on the end results.

(c) Cost estimates & quality of tender documents/drawings (\*)<sup>1</sup>

Criteria	Description
Cost estimates	Comprehensive, realistic, up-to-date and accurate (excluding factors outside consultants' control) with sufficient details to support the recommendations & deliverables including any cost reduction and expenditure levelling
Contract arrangements	Select the most suitable contract packaging arrangements and types of contract for the works
Consultation	Consult and incorporate as appropriate comments from authorities, government departments and stakeholders
Quality	Contract documents and drawings which are complete, adequate and comprehensive for the works
Timeliness	Submit contract documents in time to meet the construction programme

(\*)<sup>1</sup> Become a critical assessment item for Quantity Surveying consultancies.

(d) Tender assessment

Criteria	Description
Compliance	Comply with statutory requirements, tender assessment procedures, etc.
Technical support	Adequate technical support in facilitating a thorough tender assessment
Evaluation and recommendations	Thorough evaluation and sound recommendations with due regard to all relevant factors and considerations

## CHAPTER 5

## CONTRACT DOCUMENTS

The parts of the PAH shown in blue and bold should only be updated by Works Branch of Development Bureau.

Rev	Issue Date	Amendment Incorporated
First Issue	December 2016	NA
1	27 February 2017	Amd No. 1/2017
2	25 August 2017	Amd No. 3/2017
3	19 December 2017	Amd No. 5/2017
4	16 July 2017	Amd No. 2/2018

## 9. SPECIAL TOPICS

### 9.1 MULTI-CONTRACT AND SINGLE CONTRACT ARRANGEMENTS

Where the required financial and manpower resources are available, the contracts of a multi-contract project are normally carried out in parallel to enable the completion of the project in the shortest possible time.

Some of the issues that need to be considered and provided for in a multi-contract project would include:

- (a) Site access,
- (b) Facilities (provided by the Contractor) for other contractors,
- (c) Works areas,
- (d) Staged possession and handing over of site, and
- (e) Consequence of delay in any one of the contracts on other contracts.

Suitable provisions should be made in the constituent contracts to cover these and other relevant issues. Such provisions should be made in the SCC, PS and Drawings, where appropriate.

For projects (i) involving sequential handling-over of the project site among contractors of concurrent contracts and/or (ii) in which the work progress of one contractor is dependent on that of another contractor in the same project, the compatibility of the multi-contract arrangement with the preferred contract forms of the project should be carefully assessed. For instance, before adopting the arrangement of implementing a conventional contract for civil works and a design-and-build contract for E&M works at the same time, the pros and cons of such arrangement should be thoroughly compared with that of combining the civil and the E&M works into a single contract.

For projects involving substantial underground works, and hence with a relatively high degree of uncertainty, consideration should be given to reducing risks by carrying out works at different locations under separate contracts to be undertaken by different contractors. However, before deciding on adopting this approach, its benefits would have to be balanced against possible demerits such as the reduction in economy of scale and the need for greater management effort to deal with contract interface problems.

For time-critical projects, whilst it may be desirable to adopt advance contracts to capture programming benefits, demerits of such arrangement such as introduction of additional contract interfaces should be carefully assessed (also see Paragraph 9.19 on time-critical projects).

It is important that all the merits and demerits of using multi-contract arrangement in a project should be thoroughly assessed before deciding on the most appropriate number and form of contracts in a project.

For multi-contract projects, those parts of tender documents delineating the split of the works, particularly the drawings and bills of quantities, should be carefully checked to ensure consistency and that there is no omission or duplication of works at the interface.

## **9.2 COMPLETION IN SECTIONS**

For contracts to be completed in Sections, the tender documents, i.e. the Form of Tender, SCC, PS and Drawings, where appropriate, should explicitly define the extent of the various Sections and their respective time for completion. Separate amounts of liquidated damages and minimum amounts of liquidated damages, if any, should be set for each Section of the Works in the Appendix to the Form of Tender.

Each Section should preferably be a self-contained package of work. Great care should be taken in defining the extent of each Section to avoid any possibility of ambiguity. There should be no overlapping between Sections and all the Sections should add up to be the Works.

## **9.3 CONTRACTOR'S DESIGNS AND ALTERNATIVE DESIGNS**

Departments shall invite alternative designs and specify in the tender documents the part of the Works for which alternative designs are invited in situations where there is potential for better value for money or for enhancing buildability. The justifications for not inviting tenderers to submit alternative designs should be properly documented for future reference and auditing purposes.

Departments may require tenderers to submit tenderer's design for part of the Works not covered by the Engineer/Architect's design in the following circumstances:

- (a) Where the part of the Works is in a specialist or developing field;
- (b) Where the part of the Works involves materials and construction methods, the design of which requires the specialist experience of contractors or suppliers;
- (c) Exceptionally, where the detailed design of the part of the Works is insufficiently advanced and the completion of the Works is urgent;
- (d) For piling works where several solutions are available; and
- (e) For works of a short limited lifespan or temporary in nature.

For all tenders, departments shall include provisions to allow the Contractor to submit and the Employer to accept Cost Savings Designs to provide opportunities for achieving better value for money. The resultant saving in cost, if any, shall be shared between the Employer and the Contractor.

The contractual provisions to be incorporated into the tender documents for tenders inviting alternative designs and tenders requiring tenderer's designs are given in DEVB TCW No. 3/2014. Particular attention is drawn to the following requirements:

## APPENDIX 5.57 SAMPLE CHECKLIST FOR SETTING CONTRACT PERIOD FOR MAJOR PUBLIC WORKS CONTRACTS

Department:		Date:	
Contract No.:			
Contract Title:			

### A. Comparison with Reference Contracts

	Pretender Estimate	Proposed Contract Period: (months)	Contract Form
This contract			

Reference Contracts	Awarded Contract Sum:	Final Contract Sum	Original Contract Period: (months)	Actual / Latest Contract Period: (months)	Comparison Table in Annex
1.					
2.					
3.					

Remarks: Please refer to the Gantt Chart showing the breakdown of major works activities for details.

### B. Contract Period - Time allowance for major works activities

√ / X	Activities	Time allowance
<input type="checkbox"/>	Permits application	months
<input type="checkbox"/>	Authorities' vetting and approval of submissions	months
<input type="checkbox"/>	Critical construction activities	months
<input type="checkbox"/>	Working period due to traffic / environment / other constraints	months
<input type="checkbox"/>	Interfacing works by utility undertakings / others	months
<input type="checkbox"/>	Testing and commissioning / defect rectification	months
<input type="checkbox"/>	Other specific time-critical tasks: Please state: _____	months

### C. Project Period in LegCo Submission

√ / X	Project information	Time allowance
<input type="checkbox"/>	Project period stated in LegCo submission: From _____ to _____	months
<input type="checkbox"/>	Programme contingency for Extension of Time (at least 2 months per year)	months
<input type="checkbox"/>	Delay by other parties, e.g. site possession, interfacing works, etc	months
<input type="checkbox"/>	Delay by the contractors, e.g. material and plant delivery, resources, etc	months
<input type="checkbox"/>	Variation for change in design / additional works / unforeseen site conditions	months
<input type="checkbox"/>	Inclement weather	months
<input type="checkbox"/>	Other time allowance for employer's risks. Please state: _____	months
<input type="checkbox"/>	For project with multiple contracts, check if project period stated in LegCo submission (e.g. PWSC paper) will be extended due to this contract? If yes, please state extended project completion date: _____	

### D. Endorsement

Prepared by: (Professional)	Checked by: (Senior Professional)	Endorsed by: (D1 rank officer)
Date:	Date:	Date:

**Guideline for Completing Checklist For Setting Contract Period for Major Public Works Contracts**

1. This checklist is intended to give a summary of time allowance for critical activities and programme contingencies for a major public works contract of a Cat A project under public works programme. It is not only intended to provide a structured and aligned approach to assist project officers in devising the overall contract / project period but also enable the project leaders to take a quick check on the reasonableness of the time for construction.
2. The checklist is designed for major capital works contracts. Maintenance term contracts, service contracts, works contract under Cat D project and other entrusted and subvented works contracts are not applicable.
3. Project officers could add / delete items in Parts B and C of the checklist to suit particular circumstances of the contract.
4. The planned works programme in the form of a Gantt Chart shall be enclosed with the checklist.
5. For **Part A**, a systematic comparison with relevant and comparable past contracts is useful in assessing the reasonableness of the planned contract period. The comparison tables, which compare the contract forms, scope and quantity of works, complexity, site constraints and other peculiarities, etc of the proposed contract with the reference contracts, shall be included in the annexes.
6. For **Part B**, given some major works activities may be carried out simultaneously, the overall contract period is not necessarily the sum of time allowance for the major works activities in contract period as stated in the checklist
7. For **Part C**, the programme contingency for Extension of Time means the float between project period stated in Legislative Council (LegCo) submission and the contract period. As agreed in Works Policies Coordination Committee, a programme contingency of at least 2 months per year shall be allowed in the project period for public works projects. If the proposed works contract is one of the multiple works contracts under a public works project, the project officers shall check whether the project period stated in the LegCo submission will be expired due to this contract. If affirmative, the extended project completion date shall be stated.
8. For **Part D**, project officers shall complete the checklist and seek D1 officer's endorsement prior to inviting tender.

Amd No. 2/2018





Web site 網址 : <http://www.cedd.gov.hk>  
E-mail 電子郵件 : [chuekholai@cedd.gov.hk](mailto:chuekholai@cedd.gov.hk)  
Telephone 電話 : (852) 3547 1608  
Facsimile 傳真 : (852) 3547 1660  
Our ref 本署檔號 : ( ) in NDO-01-70-2 C  
Your ref 來函檔號 : CB4/PAC/R70  
Date 日期 : 7 August 2018

北拓展處

North Development Office

葵芳興芳路 223 號

新都會廣場第一座辦公大樓 15 樓 1501 室

Unit 1501, Level 15, Tower I, Metroplaza,  
223 Hing Fong Road, Kwai Fong,  
N.T., Hong Kong.

(Urgent by Fax 2543 9197)

Mr. Anthony CHU  
Clerk, Public Accounts Committee  
Legislative Council Complex  
1 Legislative Council Road  
Central, Hong Kong

Dear Mr CHU,

Public Accounts Committee  
Consideration of Chapter 8 of the Director of Audit's Report No. 70  
Sha Tin Section of Route 8

Thank you for your letter of 24 July 2018. The requested information and response in relation to Contract C of the subject Audit Report are provided as attached.

Yours sincerely,

A handwritten signature in black ink, appearing to read "C H Lai".

( C H Lai )

for Director of Civil Engineering and Development

Encl.

c.c. Secretary for Development (Fax No.2147 3691)  
Secretary for Transport and Housing (Fax No. 2537 6519)  
Director of Highways (Fax No. 2714 5203)  
Commissioner for Transport (Fax No. 2802 2361)  
Director of Architectural Services (Fax No. 2810 7341)  
Director of Electrical and Mechanical Services (Fax No. 2882 9042)  
Secretary for Financial Services and the Treasury (Fax No. 2147 5239)  
Director of Audit (Fax No. 2583 9063)

卓越工程 建設香港

We Engineer Hong Kong's Development

## **(II) For the Civil Engineering and Development Department**

### **Contract C**

- (a) Whether the facilitation period of Contract C was stipulated in the tender documents. If yes, provide an extract of the relevant part of the tender documents. If no, why not?***

The requirement for provision of facilitation period was stipulated in Clauses 1.82(1) and 1.82(6) of the Particular Specification (PS) under Contract C, corresponding to Clauses B and A respectively in the Audit Report. An extract of the relevant part of the PS is attached. Please note that Section XVI mentioned in PS Clause 1.82(1) was referred to as Section 4 in the Audit Report, while Sections VIII, IX and XI mentioned in PS Clause 1.82(6) were referred to as Sections 1, 2 and 3 respectively in the Audit Report.

- (b) With reference to paragraph 3.31(c) of the Audit Report, the reasons for the Civil Engineering and Development Department to decide that Clause B took precedence over Clause A in case of discrepancies. Is it a usual practice to put two separate clauses to stipulate the facilitation period?***

PS Clause 1.82(6) of Contract C (i.e. Clause A in Audit Report) stipulated that Contractor C should allow Contractors B and D to access the site and commence installation of E&M and TCSS works for a period of 9 months which meant that Contractor C had to provide facilitation works such as providing temporary lighting and ventilation inside tunnels during this period. However, the last sentence of PS Clause 1.82(6) stated that Contractor C should retain possession of and carry out upkeeping works (including facilitation works) for the duration as stipulated in PS Clause 1.82(1), i.e. until completion of Section XVI or such earlier date as instructed by the Engineer (Clause B in Audit Report). As the requirement under Clause B was related to the time for completion of Section XVI of the Works calculated from and including the date for commencement which was stipulated under Clause 49 of the General Conditions of Contract, it should take precedence over Clause A which only specified the period for facilitation works.

The stipulation of the facilitation period depends on the specific need and circumstances of individual contract. It is up to the contract drafter to choose the most appropriate mechanism to stipulate the required facilitation period in the contract document.

- (c) Was extra cost incurred arising from a shorter facilitation period of about 7.5 months for Contract C instead of nine months as originally envisaged (paragraph 3.31(d) of the Audit Report refers)?***

Items were included in the Bills of Quantities (BQ) under Contract C for the contractor to price for the provision of facilitation works on a monthly basis which were subject to remeasurement. It means that the contractor was only paid for the actual period of facilitation works provided under the Contract and therefore no extra cost was incurred.

- (d) Director of Civil Engineering and Development said at the public hearing that BQ of Contract C provides a cost for eight months of facilitation period item. Reasons for an eight-month facilitation period instead of nine months as originally envisaged?***

The estimated quantity of 8 months inserted in the tender BQ for pricing by tenderers was based on the shorter period of facilitation works (i.e. 7.5 months) specified under Clause B. However, the actual period for provision of facilitation works was subject to remeasurement and paid under relevant BQ items.

- (e) According to paragraph 3.35(b) and (c) of the Audit Report, 12 months were provided by Contractor C to further extend the provision of facilitation works. Measures to be taken to enhance the accuracy of the estimation of facilitation period and to eliminate the processing error in drafting contract clauses (paragraph 3.34(b) of the Audit Report refers)?***

The procuring departments or their consultants are required to carefully check the programmes of interfacing works are consistent with that managed by the procuring departments/consultants. The consultants are required to seek the procuring departments' comments on the time programmes prior to incorporation of the relevant information in the tender documents. The above requirements will be incorporated into PAH for implementation shortly.

***(f) How should the clauses of Contract C be revised to accurately reflect the facilitation period***

The PS Clauses can be revised to simply stipulate that 9-month facilitation period shall be provided upon completion of Sections VIII, IX and XI without making reference to the completion of Section XVI of the Works.

***(g) With reference to paragraphs 3.40 and 3.41 of the Audit Report, details of measures to be implemented to ensure the consistency of time programmes for interface works in all major public works contracts in future***

Please refer to (e).

ST89/02  
PS01/95  
08/02

ADDENDUM NO. 3  
PS Section 1  
General

(4) Record Photographs

Record photographs shall be clearly labelled to indicate the name of EBS, film roll number, frame number and date of exposure. Photographs specific for an EBS shall be compiled in an album with a jacket provided to house the relevant film negatives. If more than one roll of film is consumed for one EBS, the films shall be labelled in sequence for ease of reference.

(5) No piling or blasting works shall commence until the Contractor has agreed the findings of the survey work with the Engineer.

(6) When new defects are found in the houses or structures during the course of works, the Contractor shall suspend the works and notify the Engineer immediately. The Contractor shall appoint an independent Authorized Person / Registered Structural Engineer approved by the Engineer to investigate the cause of such defects. The Contractor shall prepare and submit an investigation report, with remedial measure and precautionary within 10 days thereafter.

(7) No piling or blasting works shall be resumed until the Contractor has identified the cause of defects and completed the remedial works. The Contractor shall revise the method of construction to prevent recurrence of similar defects in future.

Prohibition of the use  
of diesel hammers for  
percussive piling 1.81

The use of diesel hammers for percussive piling is prohibited.

Retain Possession of  
and upkeep the  
completed works 1.82

(1) The Contractor shall retain possession of and be responsible for upkeeping the completed Works as stipulated below in sub-clauses (2) to (10) until completion of section XVI or such earlier date as instructed by the Engineer.

(2) The Contractor shall substantially complete Section III of the Works, and shall carry out any outstanding work as soon as practicably after the issue of the certificates of completion or as reasonably directed by the Engineer. The Contractor shall then allow the R9K contractor to take possession of Portions 2A, 2B and 2C with the exception of the completed drainage works and the retaining walls therein which he shall retain possession of and upkeep for the duration as stipulated in sub-clause (1) above.

(3) The Contractor shall substantially complete Section IV of the Works and shall carry out any outstanding work as soon as practicably after the issue of the certificates of completion or as reasonably directed by the Engineer. The Contractor shall then allow the R9K contractor to take possession of Portions 3A, 3B and 3C with the exception of the completed drainage works therein which he shall retain possession of and upkeep for the duration as stipulated in sub-clause (1) above.



(4) The Contractor shall substantially complete Section V of the Works and carry out any outstanding work as soon as practicably after the issue of the certificates of completion or as reasonably directed by the Engineer. The Contractor shall then allow the R9K contractor to take possession of Portion 4 with the exception of the completed drainage works therein which he shall retain possession of and upkeep for the duration as stipulated in sub-clause (1) above.

(5) Upon the substantial completion of Sections VI and VII of the Works and the instruction of the Engineer, the Contractor shall allow the R9K contractor to :-

- take possession of the completed building structures above the transfer plate floor level and;
- access the site of works below the transfer plate floor of the buildings for the installation of E&M and TCSS works etc. therein for a period of 9 months. The works sequence of the installation of the E&M and TCSS works below the transfer plate floor of the buildings related to the painting, road surface finish and tunnel cladding installation between the Contractor and the R9K contractor to facilitate smooth implementation of the works for the approval of the Engineer. The Contractor shall retain possession of and upkeep the portion of the completed works below the transfer plate floor of the buildings and the associated retaining structures for the duration as stipulated in sub-clause (1) above.

(6) The Contractor shall substantially complete Sections VIII, IX and XI of the Works for the Sha Tin Heights Tunnel and the r.c. full enclosure to allow the R9K contractor to access the site and commence installation of E&M and TCSS works etc. inside the tunnel tubes and the r.c. full enclosures for a period of 9 months. The works sequence of the installation of the E&M and TCSS works etc. inside the tunnel tubes and the r.c. full enclosure related to the painting, road surface finish and tunnel cladding installation shall be co-ordinated between the Contractor and the R9K contractor to facilitate smooth implementation of the works for the approval of the Engineer. The Contractor shall retain possession of and upkeep the works substantially completed in the tunnel tubes and the r.c. full enclosures for the duration as stipulated in sub-clause (1) above.

(7) The Contractor shall substantially complete all the major bridge components and associated works as required for the proper functioning of a construction access, in replacing Temporary Access Road No.2, for use by the Contractor himself. The Contractor shall then retain possession of and upkeep the works substantially completed for Bridges N1, N2 and N3 for the duration as stipulated in sub-clause (1) above.

(8) The Contractor shall substantially complete Section XIV of the Works for Bridges N1, N2, N3, S1, S2 and S3 to allow the R9K contractor to access the site and commence installation of the E&M and TCSS works etc. thereto for a period of 9 months. The work sequence of the installation of the E&M and TCSS works etc. along the bridges related to the road surface finish, the noise panel installation and the finishing works to the bridges shall be co-ordinated between the Contractor and the R9K contractor to facilitate the smooth implementation of the works for the approval of the Engineer. The Contractor shall retain possession of and upkeep the works substantially completed for these bridges for the duration as stipulated in sub-clause (1) above.

(9) Upon the substantial completion of Section XV of the Works, the Contractor shall retain possession of and upkeep the completed foundations, traffic sign gantries, water mains, cable ducts and drawpit systems thereto for the duration as stipulated in sub-clause (1) above.

(10) Upkeeping works shall include but not exclusively, taking charge and care of the completed works, temporary ventilation and lighting, desilting, repairing of damage to the completed Works during the upkeeping period, cleaning and reinstatement before handover to the Employer or other parties.



**運輸署**

*Transport Department*

APPENDIX 29

(By Fax 2543 9197 and email)

Our Ref. TD TS/151/205/45 C  
Your Ref. CB4/PAC/R70  
Tel. No. 2829 5525  
Fax. No. 2519 8094

4 July 2018

Mr. Anthony CHU  
Clerk to the Public Accounts Committee  
Legislative Council  
Legislative Council Complex  
1 Legislative Council Road  
Central, Hong Kong

Dear Mr. Chu,

**Public Accounts Committee**  
**Consideration of Chapter 8 of the Director of Audit's Report No. 70**  
**Sha Tin Section of Route 8**

Thank you for your letter dated 12 June 2018 under reference requesting our responses to the questions listed in the **Appendix** of the letter.

Please find our responses in **both Chinese and English** in the attached Appendices. The soft copy of our responses has also been sent to the e-mail addresses listed in your letter.

Yours faithfully,

(Christopher Chiu)  
for Commissioner for Transport

Encl.

c.c.

Secretary for Transport and Housing	(Fax no.: 2537 6519)
Secretary for Development	(Fax no.: 2147 3691)
Director of Highways	(Fax no.: 2714 5203)
Director of Civil Engineering and Development	(Fax no.: 2246 8708)
Director of Architectural Services	(Fax no.: 2810 7341)
Director of Electrical and Mechanical Services	(Fax No.: 2882 9042)
Secretary for Financial Services and the Treasury	(Fax No.: 2147 5239)
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**The Legislative Council Public Accounts Committee  
Report No. 70 of the Director of Audit  
Chapter 8 – Sha Tin Section of Route 8**

**Part 4: Usage and Management of Sha Tin Section  
Supplementary information provided by the Transport Department**

Regarding the letter dated 12 June 2018 from the Legislative Council (“LegCo”) Public Accounts Committee (“PAC”) seeking information on items (a) to (o) on pages 1 to 4 of the appendix regarding the captioned matter, the reply of the Transport Department (“TD”) is as follows:

- (a)** At the public hearing held by the PAC on 11 June 2018, the Commissioner for Transport (“the Commissioner”), in reply to the question on the usage of Sha Tin Section, said that the TD had been monitoring closely the usage of Eagle’s Nest Tunnel. Moreover, regarding how to further enhance the usage of Route 8 Sha Tin Section to duly relieve the traffic congestion of the connecting roads between Kowloon and Sha Tin, the TD has been conducting detailed analysis and assessment with a focus on eliminating the bottleneck at the existing roads leading to Route 8. To this end, the TD, in collaboration with related works departments, has been striving to implement the required road works projects, including the construction of an additional lane at the approach road from Tai Po Road (Sha Tin Section) leading to Route 8 near Scenery Court<sup>1</sup>, the widening of Tai Po Road (Sha Tin Section) to a dual 3-lane carriageway<sup>2</sup>, and taking forward the strategic highway project of Trunk Road T4<sup>3</sup>.

Since the Government has been progressively implementing the above-mentioned road projects in order to divert more traffic heading for the urban

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<sup>1</sup> The relevant works were completed in 2015.

<sup>2</sup> The funding for the relevant works has been approved by the LegCo Finance Committee in May 2018. The works will commence in mid-2018.

<sup>3</sup> The relevant works include the construction of a strategic road which connects Tsing Sha Highway and Shing Mun Tunnel Road in the west as well as with Sha Tin Road in the east, to provide a linkage between West Kowloon / Tsuen Wan and Ma On Shan and Sai Kung.



areas to use Route 8, and the TD has all along been monitoring closely the overall traffic conditions of the roads concerned, the TD has not conducted any specific study on the usage of Route 8 Sha Tin Section.

- (b)** Since the commissioning of Sha Tin Section of Route 8 in 2008 and up to December 2017, the TD has proposed a total of 39 improvement items for introducing bus routes or strengthening the existing bus services passing through relevant sections of Route 8. Of them, after consultation with the relevant District Councils, 32 items have been or will be implemented, and the remaining 7 items were either not materialised or revoked after implementation. Please see **Annex 1** for the details.
- (c)** Green minibus (“GMB”) operators provide scheduled services operating on fixed routes, with the service level and fares subject to the regulation and monitoring of the TD. On the other hand, red minibus (“RMB”) services are not subject to regulation in respect of their service level and fares. It has been the Government's established policy to encourage the conversion of RMBs to GMBs for the sake of ensuring service quality level.

Since the service routings and frequencies of RMBs are not subject to regulation, RMBs, for maintaining effective traffic management, are normally restricted from providing service in newly developed areas with a comprehensive rail and bus network and from using newly commissioned expressways. However, the TD can allow minor relaxation on a case-by-case basis where there is genuine demand and so long as other public transport services and road traffic will not be affected.

The TD is studying whether the restrictions on RMBs to operate on some road sections of Tsing Sha Highway can be relaxed, and will inform the minibus trade of the result in due course.

- (d)** At the public hearing held by the PAC, the Commissioner informed Members that seven items under the Route Planning Programmes (RPPs) 2018-19 that involved frequency enhancement and service introduction had been put to relevant District Councils for consultation and their support had been secured. The seven items are scheduled for implementation between

the third quarter of 2018 and the first quarter of 2019. Please see **Annex 2** for the details.

As regards other measures for increasing the usage of Route 8 Sha Tin Section with a view to alleviating the traffic congestion at the road links between Kowloon and Sha Tin, please refer to item (a) above for the details.

**(e)**

- (i) Upon the commissioning of Tsing Sha Control Area (“TSCA”) on 19 March 2008, the TD has conducted two open tender exercises to outsource the management, operation and maintenance (MOM) of TSCA. In the first tender exercise in 2007 (Tender Reference: TD 1/2007), a total of five tender proposals have been received. In the second tender exercise in 2012 (Tender Reference: TD 5/2012), a total of three tender proposals have been received.

**(ii)&(iii)**

The management fee offered by the operator of the current TSCA MOM contract was the lowest of the conforming tenderers in the second tender exercise. The TD will make preparations for and conduct an open tender exercise about nine months to one year prior to the expiry of the current contract. The TD is drafting tender documents for the next TSCA MOM contract in consultation with relevant government departments. It is expected that tender invitation will be conducted in the fourth quarter of 2018 and the contract can be awarded to the successful tenderer in first quarter of 2019.

**(f)**

- (i) As said by the Commissioner at the public hearing held by the PAC, various government departments (including the TD, the Electrical and Mechanical Services Department (“EMSD”), the Highways Department (“HyD”) and the Architectural Services Department (“ArchSD”)) have been responsible for monitoring the performance of the operators of government tunnels and control areas (in respect of operation, administration, maintenance of

electrical and mechanical (E&M) systems and equipment, highway maintenance and building maintenance). There is a clear division of responsibilities among the four departments, with each overseeing a specific area of work: the TD monitors the daily operation as well as traffic and incident management; the HyD monitors the maintenance of bridges, viaducts and tunnel structures; the EMSD monitors the maintenance of all E&M systems and equipment; and the ArchSD monitors the maintenance of building structures.

In response to the Audit recommendations, the TD, in collaboration with other Government Monitoring Team (“GMT”) members, has consolidated a list of “GMT Members Monitoring Responsibility for Tsing Sha Control Area”, which clearly sets out the specific areas of responsibilities of various departments. The list has been attached to the current TSCA MOM contract (please see **Annex 3** for details).

- (ii) The departments concerned normally hold meetings with the TSCA operator once every one to three months to maintain communication and monitor its performance. Moreover, for the sake of strengthening the monitoring of the operator’s performance in undertaking important projects, such as to enhance monitoring and liaison on the implementation of “stop-and-go” e-Payment services, the TD will also hold joint special meetings with the operator and relevant departments as necessary. The details of the meetings (a total of 45 meetings) held and attended by the TD to discuss the TSCA operator’s operational performance are listed below:

<b>Meeting date</b>	<b>Meeting</b>
24/10/2013	Regular meeting between the EMSD/TD/HyD and the operator
5/12/2013	Regular meeting between the TD and the operator
19/12/2013	Regular meeting between the EMSD/TD/HyD and the operator
20/2/2014	
17/4/2014	
19/6/2014	
8/7/2014	Meeting between the Commissioner for Transport and the

	operator's senior management
21/8/2014	Regular meeting between the EMSD/TD/HyD and the operator
23/10/2014	
18/12/2014	
30/12/2014	Regular meeting between the TD and the operator
12/2/2015	Regular meeting between the EMSD/TD/HyD and the operator
23/4/2015	
25/6/2015	
15/7/2015	Meeting between the Assistant Commissioner for Transport and the operator's senior management
20/8/2015	Regular meeting between the EMSD/TD/HyD and the operator
21/8/2015	Regular meeting between the TD and the operator
22/10/2015	Regular meeting between the EMSD/TD/HyD and the operator
17/12/2015	
16/2/2016	
18/2/2016	
18/4/2016	Regular meeting between the TD and the operator
21/4/2016	Regular meeting between the EMSD/TD/HyD and the operator
23/6/2016	
19/7/2016	Meeting between the Commissioner for Transport and the operator's senior management
26/8/2016	Regular meeting between the EMSD/TD/HyD and the operator
6/10/2016	Regular meeting between the TD and the operator
20/10/2016	Regular meeting between the EMSD/TD/HyD and the operator
21/12/2016	Special meeting between the TD and the operator
8/2/2017	Special meeting between the TD/the Police and the operator
2/3/2017	Regular meeting between the TD and the operator
20/4/2017	Regular meeting between the EMSD/TD/HyD and the operator
22/6/2017	
4/7/2017	Regular meeting between the TD and the operator

24/8/2017	Regular meeting between the EMSD/TD/HyD and the operator
4/10/2017	Meeting between the Assistant Commissioner for Transport and the operator's senior management
19/10/2017	Regular meeting between the EMSD/TD/HyD and the operator
3/1/2018	Regular meeting between the TD and the operator
17/1/2018	Special meeting between the TD and the operator
8/3/2018	Working meeting for "stop-and-go" e-Payment services between the EMSD/TD and the operator
14/3/2018	Meeting between the Assistant Commissioner for Transport and the operator's senior management
23/3/2018	Working meeting for "stop-and-go" e-Payment services between the EMSD/TD and the operator
18/4/2018	
26/4/2018	Regular meeting between the EMSD/TD/HyD and the operator
11/5/2018	Regular meeting between the TD and the operator

In addition, the TD will, where necessary, hold meetings with other GMT members to discuss management and maintenance issues relating to the TSCA. For instance, the TD convened an inter-departmental meeting with the EMSD, HyD and ArchSD on 8 February 2018 to discuss detailed division of responsibilities among them in the monitoring of the operator's repair and maintenance work.

- (iii) As replied by the Commissioner at the public hearing held by the PAC, the TD has put in place an established monitoring mechanism to monitor the operator's performance. Under this mechanism, monitoring is pursued mainly through site inspections, working meetings, quarterly assessment reports. Please refer to **Annex 4** for the details of the TD's monitoring mechanism.

**(g)**

- (i) According to the current arrangements for conducting surprise site inspection, the TD will draw up in advance each month the timetable for Transport Controllers to conduct the TSCA inspections, including the AM shift, PM shift and Night shift, so as to cover the 24-hour operation of the TSCA. Transport Controllers will randomly conduct surprise check at different working locations of the TSCA (such as the toll plaza, administration building and control points, etc.) according to the timetable, and fill in monitoring assessment reports regarding the operator's performance. Meanwhile, Transport Officers will also inspect the operation of the TSCA once around every two weeks. When conducting surprise inspections, the TD staff will record the operators' performance. If the operator's performance is found to fall short of the contract requirements, the TD will follow up with the operator as appropriate as soon as possible.

Furthermore, arising from actual situations and needs (e.g. for investigating complaint cases or handling incidents, etc.), Transport Controllers and Transport Officers will also conduct non-scheduled ad hoc inspections to evaluate the operator's actual performance.

- (ii) At the public hearing held by the PAC, the Commissioner has responded to the allegation of the TD's failure to monitor the manning level of administrative and supporting staff. For contract management, the TD has all along adopted a two-pronged approach in monitoring performance of the operator, namely the input-oriented approach (e.g. the minimum manning level requirement) and performance-oriented approach (e.g. whether financial information can be submitted within the prescribed period), depending on the nature of the work. As the administrative and supporting staff are mainly back-up staff (e.g. clerks, chefs, accounting and administrative staff, etc.) who are not engaged in the core frontline services of the control area, there were no minimum manning level requirements for administrative and supporting staff in the tender documents. Moreover, since commencement of the contract, the TD has adopted the performance-oriented approach in monitoring the services provided by the administrative and supporting staff, including scrutinising the human resources information/ monthly performance reports/ monthly financial

information prepared by the operator, checking whether the information concerned is submitted on time, and conducting regular site inspections of the cleansing services and catering provisions to staff. The operator has all along been providing the required level of services in a timely manner, and no irregularity has been found.

Yet, since the manning level of administrative and supporting staff has been specified in the contract, the TD has accepted the Audit's recommendation and has been monitoring the operator's compliance with the manning level requirements for administrative and supporting staff specified in the contract since February 2018.

(iii) The TD is responsible for monitoring the manning levels of operations staff and administrative and supporting staff. According to the staff attendance records furnished by the operator and the TD's inspection records<sup>4</sup>, there was no shortfall for staff not subject to liquidated damages ("LD") in these staff categories from September 2013 to January 2017.

**(h)** As mentioned in the reply to item (g)(ii) above, the TD has been monitoring the service level of the administrative and supporting services provided by the operator to ensure its service quality. However, given that the manning level requirement is specified in the contract, the TD has accepted the Audit's recommendation and requested the operator to submit manning information about the administrative and supporting staff starting from 2018. The TD will also check the operator's compliance with the manning level requirement for the administrative and supporting staff through site inspections and monthly operations reports submitted by the operator. According to the information furnished by the operator as well as the TD's site inspections and scrutiny of the monthly operations reports submitted by the operator since 2018, the manning level of the administrative and supporting staff has met the contract requirement since the contract came into effect.

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<sup>4</sup> During the inspections held from September 2013 to January 2017, the TD only recorded the manning level of operations staff.

**(i)**

- (i) Of the 403 staff on duty, 343 frontline staff are subject to LD for any shortfall, including 186 operations staff (responsible for daily operation, traffic and incident management), 34 highway maintenance staff, 122 E&M staff and 1 building maintenance staff. The purpose of imposition of LD is to ensure efficient and safe operation of the control area at all times. The operator needs to deploy sufficient frontline staff who are critical in carrying out the routine operations and maintenance duty in the control area (e.g. incident handling and maintenance of E&M systems). Therefore, it is stipulated in the current contract that LD are imposed for any staff shortfall in the ranks of frontline operational staff.
- (ii) As for the remaining 60 staff not subject to LD for any shortfall, they include the principal (management and professional) staff, the supporting staff for highway maintenance and building maintenance, as well as the administrative and supporting staff (such as administrative manager, chefs and clerks, etc.) Under the contract terms, for any reason a vacancy of the principal (management and professional) staff suddenly arises, the operator should inform the TD within three working days, and employ an eligible person to fill the vacant post as soon as possible upon approval by the TD. Any failure on the part of the operator to employ the above 60 staff not subject to LD for any shortfall in compliance with the staff manning level requirement stipulated in the contract also constitutes a breach of the contract. If there is persistent shortfall in staff, the Government may impose penalties on the operator pursuant to the Tsing Sha Control Area Ordinance (Cap. 594) or the MOM contract. Please see item (I)(i) below for details regarding the contract terms and legal provisions concerned.
- (iii) As mentioned by the Commissioner at the public hearing held by the PAC, the 403 staff refers to those assigned to various shifts. The figure does not include the 80 “leave relief” staff (including 67 frontline operations staff and 13 frontline E&M staff). The manning of these “leave relief” staff is for filling vacancies of operations and E&M staff in the AM/PM/Night shift to maintain the 24-hour TSCA operation. Whenever there is a staff shortfall in a required duty shift, the TSCA operator will suitably deploy replacement



staff. It will deploy “leave relief” staff in the first place. If there is still a staff shortfall, it will fill the vacancies through overtime work or acting appointment arrangements. The normal operation of the TSCA has generally been maintained without being affected by staff shortfall. Yet, if there are vacancies in certain duty shifts which cannot be filled and these staff posts are subject to LD for any shortfall, LD will be imposed.

- (iv) According to the MOM contract, the operator needs to sign employment contracts with all the employees and may outsource non-core services and maintenance work in accordance with the contract requirements. As at end-May 2018, except for several staff members engaged in catering services who are outsourced staff, all staff members in the TSCA are directly employed by the operator.
- (v) According to the MOM contract, the operator may, after obtaining approval from relevant departments, outsource repair and maintenance work, and the outsourced work may offset the manpower required for such work and the corresponding LD to be imposed. For example, the operator outsourced some of the E&M repair work from October 2013 to April 2014. Such outsourced work could be used to offset the LD otherwise imposed for the E&M staff shortfall during that period, based on the EMSD’s calculation of the number of E&M staff otherwise required. As mentioned by the Commissioner at the public hearing held by the PAC, LD will still be imposed on the operator if the staff shortfall exists after outsourcing. The terms on LD in the MOM contract are at **Annex 5**.
- (i)** Two Transport Controllers of the TD are stationed at the TSCA on a regular basis to conduct monitoring work, including monitoring the operator’s manning level, staff training and examinations, operational records such as information about traffic flows, toll collection procedures and operation of toll booths, as well as recovery vehicles conditions and rescue procedures, etc. The Transport Controllers report the assessment results to relevant Transport Officers for appropriate follow-up actions. Having regard to actual situations and needs, Transport Officers will also conduct site inspections at the TSCA.

**(k)** Where necessary, the HyD will discuss with the TD on repair and maintenance issues (e.g. works for retrofitting gates on viaducts) of the TSCA. At present, the HyD does not regularly provide the TD with records of its meetings with the operator.

**(l)**

(i) As replied by the Commissioner at the public hearing held by the PAC, the MOM contract contained clear sanction clauses against the operator's failure to meet the performance requirements / operating standards. Under sections 24 and 25 of the Tsing Sha Control Area Ordinance, if an operator is in breach of a management agreement, the relevant authority may impose, with the approval of the Chief Executive in Council, a financial penalty on the operator in accordance with the Ordinance.

The Government may impose a financial penalty on the operator in respect of each breach pursuant to the ordinance. Where the breach is capable of being remedied, the amount of financial penalty imposed for each breach shall not exceed \$10,000 on the first occasion; if the relevant breach continues, the Government may impose a further financial penalty not exceeding \$10,000 on the operator for each day. Where the breach is not capable of being remedied, the amount of financial penalty imposed for each breach shall not exceed \$20,000 on the first occasion, \$50,000 on the second occasion and \$100,000 on the third or a subsequent occasion.

Moreover, under clauses 91 to 93 of the MOM contract, for any fault or breach of the management contract by the operator which would cause damage to the Government, the Government may seek compensation from the operator. In serious case, the Government may even terminate the contract.

Among them, for any staff shortfall or failure to attain the operating standards of core services, the operator is required to pay LD to the Government. Apart from imposing LD for staff shortfall, the TD on two occasions claimed an amount of \$3,801 as LD each to compensate for the

administrative expenses incurred by the Government due to the operator's failure to arrive at the scenes of traffic accidents on time.

(ii) The MOM contract has specified the conditions for termination of contract. In case of the operator's repeated non-compliance with the contract requirements, the Government may seek to terminate the contract.

**(m)**

(i) The figures on the "actual staff shortfall on average" in table 17 in the Audit's Report were worked out from the Audit analysis of manning levels and records submitted by the TD, EMSD, HyD and ArchSD to reflect the actual average numbers of staff shortfall subject to LD at the TSCA after deducting staff's overtime work and acting appointment from January to September 2017.

(ii) The numbers of staff who worked overtime and the total numbers of overtime working hours of the TSCA operator's staff from January to December 2017 are detailed as follows:

2017	Operations staff		E&M staff		Highway maintenance staff		Building maintenance staff	
	Overtime work							
	No. of staff	No of working hours	No. of staff	No. of working hours	No. of staff	No. of working hours	No. of staff	No. of working hours
January	93	2182.2	37	986.5	17	641	0	0
February	90	4792.25	30	789.5	28	623	0	0
March	95	5572.72	37	1208.5	31	458	0	0
April	102	6014.75	22	992	11	130	0	0
May	102	6511.98	29	1041	10	84	0	0
June	103	6600.75	36	1355.5	30	696	0	0
July	110	6457	37	1105	33	472.5	0	0

August	108	5923.75	50	1262.3	26	586.2	0	0
September	94	5244.5	49	1311.5	8	203	0	0
October	98	6522.25	36	1233	19	317	0	0
November	105	6897	43	1450.3	16	229	0	0
December	98	6552.75	36	1291.5	21	668	0	0

**(n)** At the public hearing held by the PAC, the Commissioner said that a staff member could take up the duties of two posts without incurring LD. At present, the operator must arrange for sufficient staff on duty in the AM/PM/Night shifts in accordance with contract requirements to ensure efficient and safe operation of the control area at all times. A staff member on shift duty with qualifications meeting the requirements of more than one post could take up different posts in different shifts.

In terms of daytime work, staff taking their entitled leave (such as maternity leave, paternity leave, rest day, sick leave, general holiday and statutory holiday as well as annual leave, etc.) would not be regarded as staff shortfall. Moreover, a staff member on daytime duty could take up the duty of another post in the PM/night shift as long as he/she meets the qualification requirement of the post, which may also offset the relevant amount of LD.

However, if any staff shortfall persists in the control area even after doubling-up/acting among the staff is arranged by the operator, corresponding LD would be imposed on the operator.

**(o)**

(i) As replied by the Commissioner at the public hearing held by the PAC, the MOM contract for the TSCA was the first contract imposing LD clauses against the operator of government tunnel and control area. The mechanism was added within a short period of time upon the request of the Central Tender Board. The details are as follows:

In May 2013, after selection of the successful tenderer for the MOM contract of the TSCA as recommended by the Tender Assessment Panel (comprising officers from the TD, HyD, EMSD and ArchSD), the Central Tender Board informed the TD that sanctions should be imposed if the operator failed to comply with its committed minimum manning level, with a view to conveying a clear message that the operator had to fully comply with the contract requirements and address its inadequacies as soon as possible. Upon such request, the TD had to negotiate with the selected tenderer on the insertion of relevant clauses in the contract within a short period of time. After obtaining the agreement of the selected tenderer, the sanction clauses relating to LD for staff shortfall were incorporated into the MOM contract for the TSCA.

Since the above recommendation by the Central Tender Board was made after the successful tenderer was selected, such clauses have not been included in the tender document. Also, given the limited time in preparing the contract clauses, only “in-principle” clauses are stipulated in the contract. Therefore, when problems were encountered in implementing the contract, it took time for discussing and agreeing with the operator the detailed methodology for calculating the amount of LD.

- (ii) As explained by the Commissioner at the public hearing, the MOM contract for the TSCA was the first contract imposing LD clauses against the operator. Also, the LD clauses were demanded by the Central Tender Board only after the tenderer was selected, and the agreement of the operator for incorporating the clause into the contract was obtained only shortly before the signing of the contract. Therefore, in implementing the contract, it took time for relevant government departments and the operator to discuss and agree on the methodology for calculating the amount of LD (e.g. how sick leave or annual leave, or outsourcing and acting appointment would be taken into account). In the process, the TD has on a number of occasions sought legal advice from the Department of Justice on the interpretation of LD clauses. It also held

numerous meetings with EMSD, HyD and the TSCA operator. In December 2016, the operator arranged for staff of their overseas headquarters to come to Hong Kong to meet TD staff and discuss matters relating to the operation of the TSCA, including the clause and methodology for calculating the amount of LD, timeframe for payments for contract claims, as well as the financial impact of LD on the operator.

In early 2017, after the methodology and details for calculating the amount of LD imposed for staff shortfall has been largely sorted out, the Government proceeded to work out the format of submitting information and develop the worksheet for checking the submitted information. In May 2017, the first letter on imposing LD for staff shortfall was issued. In June 2017, the TD discussed and agreed with the operator the arrangement for collecting in batches the LD for the period from the commencement of contract to end-2017 by March 2018. The operator has paid off to the TD the full amount of LD for staff shortfall from the commencement of contract to end-2017 on time by March 2018.

(iii) TD's records of LD imposed on the operator are appended below:

<b><u>Period</u></b>	<b><u>Letter date for LD collection</u></b>	<b><u>Payment date</u></b>	<b><u>LD amount (\$)</u></b>
<b><u>E&amp;M</u></b>			
Sep - Nov 13	10/5/2017	16/5/2017	About 1.38 million
Jan 17	25/5/2017	1/6/2017	About 320,000
Feb - Mar 17	10/7/2017	17/7/2017	About 630,000
Apr - May 17	18/10/2017	1/11/2017	About 700,000
Jun - Sep 17	19/12/2017	29/12/2017	About 1.34 million
Dec 13 - Feb 14	7/12/2017	18/12/2017	About 1.32 million
Mar - May 14	9/1/2018	16/1/2018	About 1.05 million
Oct - Nov 17	25/1/2018	1/2/2018	About 620,000
Nov 15 - Dec 16	8/2/2018	16/3/2018	About 5.3 million

Oct 14 - Oct 15	2/2/2018	21/2/2018	About 4.7 million
Dec-17	22/2/2018	1/3/2018	About 310,000
Jun - Sep 14	30/1/2018	1/2/2018	About 1.22 million
<b>Total collected for Sept 2013 – Dec 2017</b>			<b>About 18.92 million</b>
Jan-18	13/4/2018	16/4/2018	About 310,000
Feb-18	13/4/2018	16/4/2018	About 310,000
Mar-18	31/5/2018	1/6/2018	About 300,000
<b>Total collected for Sept 2013 – Mar 2018</b>			<b>About 19.84 million</b>
<u>Building maintenance</u>			
Mar 14 - Sep 14	20/2/2018	1/3/2018	About 120,000

(iv) The TD will check all records submitted by the operator in relation to the imposition of LD, including attendance record, human resources records and staff qualification, etc, to ensure that the records are accurate and the staff on duty are qualified.

In addition, the TD also regularly deploys officers to conduct surprise checks to monitor and record the manning level of operations staff in the TSCA on site, which would facilitate cross checking of attendance records submitted by the operator at month-end.

**Annex 1****RPP Proposals before December 2017**

Item No.	Year of RPP	Route No.	Origin - Destination	Details of the proposal	Date of DC Consultation	Comment of relevant DCs	Date of Implementation	Reason for not implementing the proposal
1.	2017-2018	980A	Shek Mun Estate to Wan Chai (Hennessy Road)	Introduction of two morning departures from Shek Mun Estate to Wan Chai (Hennessy Road) via Tsing Sha Highway	2017 Q1	Supported	2 January 2018	-
2.	2017-2018	287X	Shui Chuen O – Jordan ( Circular)	Service enhancement (frequency improvement with one double decker added)	2017 Q1	Supported	5 June 2017	-



Item No.	Year of RPP	Route No.	Origin - Destination	Details of the proposal	Date of DC Consultation	Comment of relevant DCs	Date of Implementation	Reason for not implementing the proposal
3.	2017-2018	272X	Tai Po Central – Mong Kok	Service enhancement  (add one departure each in morning and evening periods in addition to the existing 3 departures each in morning and evening peak periods)	2017 Q1	Supported	Target implementation date revised to 2018 Q4	-
4.	2017-2018	E43	Tung Chung – Wah Ming	Introduction of two departures each in morning and evening peak periods plying between Tung Chung and Wah Ming via Tsing Sha Highway	2017 Q1	Supported in principle subject to further discussion on routeing	Discussing with District Council on the routeing and service arrangement	-

Item No.	Year of RPP	Route No.	Origin - Destination	Details of the proposal	Date of DC Consultation	Comment of relevant DCs	Date of Implementation	Reason for not implementing the proposal
5.	2016-2017	38B	Riviera Garden – Shek Mun	Introduction of one departure each in morning and evening peak periods between Riviera Garden and Shek Mun Estate via Tsing Sha Highway	2016 Q1	Supported	22 January 2018	-

Item No.	Year of RPP	Route No.	Origin - Destination	Details of the proposal	Date of DC Consultation	Comment of relevant DCs	Date of Implementation	Reason for not implementing the proposal
6.	2016-2017	240X	Wong Nai Tau – Kwai Hing Station	<p>Service enhancement</p> <p>(add one morning departures from Wong Nai Tau to Kwai Hing in addition to the existing two morning departures) and introducing three evening departure from Kwai Hing to Wong Nai Tau, via Tsing Sha Highway</p> <p>(Remark: Eventually, two (instead of one) morning departures were added and two (instead of three) evening</p>	2016 Q1	Supported	25 September 2017	-

Item No.	Year of RPP	Route No.	Origin - Destination	Details of the proposal	Date of DC Consultation	Comment of relevant DCs	Date of Implementation	Reason for not implementing the proposal
				departures were introduced on 25 September 2017 in view of passenger demand)				

Item No.	Year of RPP	Route No.	Origin - Destination	Details of the proposal	Date of DC Consultation	Comment of relevant DCs	Date of Implementation	Reason for not implementing the proposal
7.	2016-2017	272E	Tai Wo – Sham Shui Po (Yen Chow Street)	Introduction of two departures each in morning and evening peak periods between Tai Wo and Sham Shui Po (Yen Chow Street) via Tsing Sha Highway	2016 Q1	Supported	9 October 2017	-
8.	2016-2017	272X	Tai Po Central – Mongkok	Introduction of three evening departures from Mongkok to Tai Po Central via Tsing Sha Highway	2016 Q1	Supported	19 June 2018	-
9.	2016-2017	280X	Sui Wo Court – Tsim Sha Tsui East ( Mody Road) (via Tsing Sha	Redeployment of one double decker from Rt. 80M for service strengthening of Rt. 280X	2016 Q1	Some District Councillors requested for	30 October 2017	-

Item No.	Year of RPP	Route No.	Origin - Destination	Details of the proposal	Date of DC Consultation	Comment of relevant DCs	Date of Implementation	Reason for not implementing the proposal
10.			Highway)	Introduction of one morning departure from Greenwood Terrace to Tsim Sha Tsui East	2016 Q1	service strengthening of Rt. 280X, while maintaining the original service level of Rt. 80M.	-	After discussing with the bus company, the TD decided to withdraw the introduction of morning departure from Greenwood Terrace to Tsim Tsui while maintaining

Item No.	Year of RPP	Route No.	Origin - Destination	Details of the proposal	Date of DC Consultation	Comment of relevant DCs	Date of Implementation	Reason for not implementing the proposal
								the whole day service of Rt. 80M. The TD informed the District Council accordingly in June 2016.
11.	2016-2017	270D	Luen Wo Hui to Sham Shui Po	Introduction of one special departure of the main route 270A and named as 270D (from Luen Wo Hui to Sham Shui Po via Tsing Sha Highway)	2016 Q1	Supported	27 June 2016	-

Item No.	Year of RPP	Route No.	Origin - Destination	Details of the proposal	Date of DC Consultation	Comment of relevant DCs	Date of Implementation	Reason for not implementing the proposal
12.	2016-2017	271X	Tsim Sha Tsui (Canton Road) to Fu Heng	Diversion of six evening departures of Rt. 271 to travel via Tsing Sha Highway and named as Rt. 271X	2016 Q1	Supported	27 February 2017	-
13.	2016-2017	286X	Hin Keng – Sham Shui Po ( Circular)	Service enhancement (frequency improvement with one double decker added)	2016 Q1	Supported	15 July 2017	-
14.	2016-2017	980X	Wu Kai Sha Station – Wan Chai (Hennessy Road) / Admiralty Station (East)	Introduction of two departures each in morning and evening peak periods plying between Wu Kai Sha Station and Wan Chai (Hennessy Road) / Admiralty Station (East) via Tsing Sha Highway	2016 Q1	Supported	20 February 2017	-



Item No.	Year of RPP	Route No.	Origin - Destination	Details of the proposal	Date of DC Consultation	Comment of relevant DCs	Date of Implementation	Reason for not implementing the proposal
15.	2016-2017	981P	Yiu On – Wan Chai (Hennessy Road) / Admiralty Station (East)	Introduction of two departures each in morning and evening peak periods plying between Yiu On and Wan Chai (Hennessy Road) / Admiralty Station (East) via Tsing Sha Highway	2016 Q1	Supported	20 February 2017	-
16.	2016-2017	A47X	Tai Po (Fu Heng) – Airport (GTC)	Introduction of new route plying between Tai Po (Fu Heng) and the Airport via Tsing Sha Highway	2016 Q1	Supported	27 January 2017	-
17.	2016-2017	N283	Tsim Sha Tsui East (Mody Road) to Wong Nai Tau	Introduction of three overnight departures from Tsim Sha Tsui East (Mody Road) to Wong Nai	2016 Q1	Supported	14 February 2017	-

Item No.	Year of RPP	Route No.	Origin - Destination	Details of the proposal	Date of DC Consultation	Comment of relevant DCs	Date of Implementation	Reason for not implementing the proposal
				Tau and via Tsing Sha Highway				
18.	2015-2016	270S	Tsim Sha Tsui East (Mody Road) to Luen Wo Hui	Diversion of routeing via Tsing Sha Highway	2015 Q1	Supported	3 October 2015	-
19.	2015-2016	985	Mei Tin ( Mei Chi House ) to Wan Chai(Hennessy Road)	Diversion of the original route 305 to travel via Tsing Sha Highway and renaming it as Rt. 985	2015 Q1	Supported	22 August 2015	-
20.	2014-2015	272P	Fu Heng to Kwai Hing Station	Diversion of routeing via Tsing Sha Highway and extension from Cheung Sha Wan to Kwai Hing Station	2014 Q1	Supported	10 January 2015	-

Item No.	Year of RPP	Route No.	Origin - Destination	Details of the proposal	Date of DC Consultation	Comment of relevant DCs	Date of Implementation	Reason for not implementing the proposal
21.	2014-2015	286P	Mei Chung Court to Cheung Sha Wan	Diversion of five morning special departures of the main route 286X and named as 286P (from Mei Chung Court to Cheung Sha Wan via Tsing Sha Highway)	2014 Q1	Supported	16 June 2015	-
22.	2014-2015	307A	Tai Po (Tai Po Tau) to Sheung Wan	Diversion of routeing via Tsing Sha Highway	2014 Q1	Some District Councillors concerned about the traffic congestion on Tai Po Road (Sha Tin Section).	-	After considering the opinions of District Council, the TD decided to withdraw the proposal and informed

Item No.	Year of RPP	Route No.	Origin - Destination	Details of the proposal	Date of DC Consultation	Comment of relevant DCs	Date of Implementation	Reason for not implementing the proposal
								District Council in June 2014.
23.	2014-2015	307B	Tai Po (Wan Tau Tong) to Sheung Wan	Diversion of routeing via Tsing Sha Highway	2014 Q1	Some District Councillors concerned about the traffic congestion on Tai Po Road (Sha Tin		After considering the opinions of District Council, the TD decided to withdraw

Item No.	Year of RPP	Route No.	Origin - Destination	Details of the proposal	Date of DC Consultation	Comment of relevant DCs	Date of Implementation	Reason for not implementing the proposal
						Section).		the proposal and informed District Council in June 2014.
24.	2014-2015	307C	Tai Po (Tai Po Tau) to Wan Chai (HKCEE)	Introduction of two morning departures from Tai Po Tau to Wan Chai (HKCEE) via Tsing Sha Highway	2014 Q1	Supported	9 February 2015	-
25.	2014-2015	272X	Tai Po Central to Mong Kok	Introduction of three morning departures from Tai Po Central to Mong Kok via Tsing Sha Highway	2014 Q1	Supported	10 January 2015	-

Item No.	Year of RPP	Route No.	Origin - Destination	Details of the proposal	Date of DC Consultation	Comment of relevant DCs	Date of Implementation	Reason for not implementing the proposal
26.	2014-2015	286C	Lee On – Sham Shui Po	Introduction of four morning departures and one evening departure plying between Lee On and Sham Shui Po via Tsing Sha Highway	2014 Q1	Supported	6 December 2014	-
27.	2014-2015	280X	Sui Wo Court – Tsim Sha Tsui East ( Mody Road)	Diversion of the original route 280P to travel via Tsing Sha Highway, conversion to whole day service and renamed it as Rt. 280X	2014 Q1	Supported	24 January 2015	-
28.	2014-2015	240X	Wong Nai Tau – Kwai Hing Station	Introduction of two morning departures from Wong Nai Tau to Kwai Hing Station via Tsing Sha Highway	2014 Q1	Supported	15 December 2014	-

Item No.	Year of RPP	Route No.	Origin - Destination	Details of the proposal	Date of DC Consultation	Comment of relevant DCs	Date of Implementation	Reason for not implementing the proposal
29.	2013-2014	270B	Sheung Shui – Sham Shui Po	Introduction of five departures each in morning and evening peak periods plying between Sheung Shui and Sam Shui Po via Tsing Sha Highway	2013 Q1	Supported	17 August 2013	-
30.	2012-2013	286X	Hin Keng – Sham Shui Po ( Circular)	Diversion of the original route 86B to travel via Tsing Sha Highway and renamed it as Rt. 286X	2012 Q1	Supported	1 December 2012	-
31.	2012-2013	287X	Shui Chuen O – Jordan ( Circular)	Diversion of the original route 87A to travel via Tsing Sha Highway and renamed as Rt. 287X	2012 Q1	Supported	23 August 2014	-

Item No.	Year of RPP	Route No.	Origin - Destination	Details of the proposal	Date of DC Consultation	Comment of relevant DCs	Date of Implementation	Reason for not implementing the proposal
32.	2012-2013	982X	Yu Chui Court to Central (Macau Ferry)	Diversion of the original route 182P to travel via Tsing Sha Highway and renamed as Rt. 982X	2012 Q1	Supported	27 August 2012	-
33.	2012-2013	373	Sheung Shui – Sheug Wan / Wan Chai ( HKCEE)	Diversion of the evening peak departures of Rt. 373 (Wan Chai to Sheung Shui) to travel via Tsing Sha Highway	2012 Q1	Supported	3 September 2012*	-

\* Routeing of Rt. 373 was converted back to travel via Tate's Cairn Highway in lieu of Tsing Sha Highway with effect from 7 September 2013 due to comments arose from North District Council.



Item No.	Year of RPP	Route No.	Origin - Destination	Details of the proposal	Date of DC Consultation	Comment of relevant DCs	Date of Implementation	Reason for not implementing the proposal
34.	2011-2012	81P	Sha Tin Wai to Tsim Sha Tsui	Diversion of routeing to travel via Tsing Sha Highway	2011 Q1	Some District Councillors were dissatisfied with the increased fare (i.e. +\$0.5) after the proposed diversion.		After discussing with the bus company, the TD decided to maintain the original routeing and fare, and informed the District Council in June 2011.

Item No.	Year of RPP	Route No.	Origin - Destination	Details of the proposal	Date of DC Consultation	Comment of relevant DCs	Date of Implementation	Reason for not implementing the proposal
35.	2011-2012	287X	Pok Hong – Jordan (Circular)	Diversion of original route 87A to travel via Tsing Sha Highway and renamed as Rt. 287X	2011 Q1	Some District Councillors disagreed with the increased fare (i.e. +\$0.6) after the proposed diversion.		After discussing with the bus company, the TD decided to maintain the original routeing and fare, and informed the District Council in June 2011.

Item No.	Year of RPP	Route No.	Origin - Destination	Details of the proposal	Date of DC Consultation	Comment of relevant DCs	Date of Implementation	Reason for not implementing the proposal
36.	2010-2011	249X	Sha Tin Central -Tsing Yi Station	Introduction of special departures of Rt. 49X and named it as Rt. 249X( Tsing Yi Station - Sha Tin Central via Tsing Sha Highway)	2010 Q1	Supported	26 July 2010	-

### Non RPP Proposals before December 2017

Item No.	Route No.	Origin - Destination	Details of the proposal	Date of DC Consultation	Comment of relevant DCs	Date of Implementation
37.	70S	Wo Hop Shek – Hung Hom Station	Diversion of routeing to travel via Tsing Sha Highway	2016 Q1	No adverse comment was received	9 October 2016
38.	270P	Sheung Shui – Tsim Sha Tsui East (Mody Road)	Introduction of two morning departures from Sheung Shui to China Ferry Terminal Bus Terminus via Tsing Sha Highway	--@	--@	13 December 2010
39.	373A	Wah Ming – Wan Chai (HKCEE)	Diversion of routeing to travel via Tsing Sha Highway	2009 Q1	Supported	30 March 2009 <sup>#</sup>

@ As per request of the North District Council, KMB introduced two morning departures of route 270A (Sheung Shui – Kowloon Station) from Sheung Shui to China Ferry Terminal Bus Terminus via Tsing Sha Highway and named as route 270P. The terminus of route 270P was relocated to Kowloon Station in June 2012

# Routeing of Rt. 373A was converted back to travel via Tai Lam Tunnel in lieu of Tsing Sha Highway with effect from 20 December 2010 due to comments arose from North District Council.

## **Annex 2**

### **Details of the seven proposed RPP improvement items in 2018-2019**

Item No.	Route No.	Origin-Destination	Proposal	Target Implementation Date
1.	287P	Shui Chuen O to Mongkok	Introduction of one special morning departure of the main route 287X and named as Rt.287P (from Shui Chuen O to Mongkok via Tsing Sha Highway)	2019 Q1
2.	270B	Sheung Shui – Sham Shui Po	Conversion from peak only service to whole-day service	2018 Q3
3.	286C	Lee On – Sham Shui Po	Conversion from peak only service to whole-day service	2018 Q4
4.	982X	Yu Chui Court to Wan Chai (Fleming Road)	Introduction of four evening departures from Admiralty Station (East) to Yu Chui Court via Tsing Sha Highway, in addition to the existing 11 morning departures	2018 Q4

Item No.	Route No.	Origin-Destination	Proposal	Target Implementation Date
5.	985	Mei Tin (Mei Chi House) – Wan Chai (Hennessy Road)	Introduction of four evening departures from Admiralty Station (East) to Mei Tin (Mei Chi House) via Tsing Sha Highway, in addition to the existing 12 morning departures	2018 Q4
6.	272E	Tai Wo – Sham Shui Po (Yen Chow Street)	Service enhancement (add two departures each in morning and evening peak periods in addition to the existing two departures each in morning and evening peak periods)	2018 Q4
7.	307C	Tai Po (Tai Po Tau) Road to Wan Chai (Convention Centre)	Service enhancement ( add two morning departures in addition to the existing four morning departures)	2018 Q3

## Annex 3

### List of “GMT Members Monitoring Responsibility for Tsing Sha Control Area (“TSCA”)” attached to the current TSCA MOM contract



Our Ref. TD TS/151/205/22C  
Tel. No. 2829 5536  
Fax. No. 2519 8094

By Email and fax (3140 1315)

13 March 2018

Mr. Kelvin Sze  
Contract Director  
Serco Lam JV  
Suite 1101, Sino Plaza  
255-257 Gloucester Road  
Causeway Bay  
Hong Kong

Dear Sir,

**Agreement for Management, Operation and Maintenance (“MOM”)  
of Tsing Sha Control Area (“TSCA”)  
Addendum to Schedule I and III**

The Government may from time to time appoint a Government Monitoring Team (“GMT”) comprising officers from various Government departments to be responsible for monitoring and auditing the Operator’s performance in accordance to the major buildings, structures, facilities and equipment to be managed, operated and maintained by the operator and scheduled maintenance works requirements set out in Schedule I and III of Agreement for MOM of TSCA respectively.

To supplement Schedule I and III, we have consolidated a detailed list of “GMT Members Monitoring Responsibility for TSCA” at **Annex**. Please contact the responsible departments for issues related to these items on the list accordingly.

Thank you for your attention.

Yours faithfully,

  
(Ian TSANG Yee-yeung)  
for Commissioner for Transport

**Detailed List on Responsibilities of Government Monitoring Team Members in  
Monitoring the Performance of the Operator of Tsing Sha Control Area**

Item No.	Buildings, Structures, Facilities and Equipment	Responsible Department
1	Viaduct and Bridges (Structures)	HyD
2	Highways and Road Structures	HyD
3	Tunnel Structures	HyD
4	Footbridge in the Toll Plaza	HyD
5	Toll Booths	ArchSD
6	Administration Building (Nam Wan & Sha Tin)	ArchSD
7	Portal Buildings	ArchSD
8	Ventilation Buildings	ArchSD
9	Control Kiosks	ArchSD
10	Man-made Slopes	HyD / ArchSD*
11	Lighting (including high mast lighting)	EMSD
12	High mast lighting structures	HyD
13	Fire Service Installation and Equipment	EMSD
14	Sewage Treatment Plant (E&M Equipment)	EMSD
15	Landscaping	HyD
16	Software Maintenance for Traffic Control and Surveillance System (TCSS), Toll Collection System and E&M Systems with embedded software	EMSD
17	Wind And Structural Health Monitoring System (WASHMS) and Associated Operations	HyD
18	Waterworks Installations for buildings (after water meter of buildings)	ArchSD

\*according to SIMAR's record of maintenance agents



**Tunnels and Tsing Ma Section**  
**Monitoring Mechanism of TSCA**  
**Monitoring Methods**

(TD's internal guideline which is in Chinese only)

**監察方式**

主要的監察方式包括實地巡查、舉行會議、編制表現報告等，詳情如下：

1. **在管制區內的監察工作**

運輸監督及運輸主任會定期在管制區內分別執行「定質評估」(Qualitative Assessment) 及「定量評估」(Quantitative Assessment) 的監察工作。

「定量評估」工作包括監察各職級合資格人員的數目、人手短缺情況、收費站運作數目、管制區車輛數目、管制區日常及緊急救援設備等；至於「定質評估」工作則主要監察營運者在日常營運時的各項處理程序，包括收

取使用費程序、實施單管雙程措施、車輛救援程序、員工訓練安排等。

一般而言，高級運輸監督及運輸監督會安排每兩星期在管制區內共分別進行一次及六次的「定量評估」工作，至於高級運輸主任及運輸主任則會安排每兩星期在管制區內進行最少半天的「定質評估」工作。因應實際情況及需要，運輸署亦會不定期於管制區進行突擊檢查。在完成監察工作後，運輸監督及運輸主任均須填寫監察評估報告以作記錄，如發現營運者工作未能符合合約要求時，運輸監督及運輸主任須與營運者作出適當的跟進。

## 2. 工作會議

運輸署定期和營運者舉行會議，以確保及協助營運者正確執行「管理、營運和維修」合約所規定的職責。運輸署亦會不定期與路政署、建築署及機電工程署開會，以保證營運和維修的監察工作順利進行。

### 3. 營運指引

運輸署會監督營運者依據營運指引程序執行工作，例如單管雙程措施、車輛救援程序及收取使用費程序等。

### 4. 管制區內各機電系統、建築物的設備及政府車輛的更新及替換

運輸署會定期檢視管制區內各建築物設備、儀器、系統及政府車輛，監察營運者所提供的維修和保養，以確保正常運作。就機電系統方面，運輸署透過聘任機電工程署屬下的機電工程營運基金，以監察管制區營辦商就機電工程方面提供的服務，確保營辦商符合合約要求。運輸署需監察機電工程營運基金所提供的服務是否符合就各項目訂立的所需服務水平(例如機電工程署人員每月於管制區的巡查次數)。

運輸署亦會替營運者更新/替換政府提供的儀器、車輛、管制區內的設備，以達政府訂下的標準。

## 5. 每月/季度表現報告

營辦商每月會向政府監察小組各成員提交表現報告，以供查核其表現情況。與此同時，運輸署、機電工程署、路政署及建築署會按各自的職權範圍，每季評核營辦商的表現。有關部門會把其表現報告提交予運輸署備考，以製備季度整體表現評核報告。

*\*Note by Clerk, PAC: Chinese version only.*

**Relevant LD terms in the MOM Agreement of TSCA**

**91A. Deductions**

91A.1 The Operator shall ensure that at all times the actual number of his staff employed at a rank(s) set out in the first column of Table 1 in Schedule XXIII shall not be less than the number of staff at that rank(s) specified in Schedule XI and that in case a staff is working on shift at a rank which is set out in the first column of Table 1 in Schedule XXIII, the actual hour of that staff working on a shift shall not be less than the required working hour on that shift for that rank of staff as specified in Schedule XI. In the event of resignation, dismissal, or absence of any such staff during the shift hours set out in Schedule XI, the Operator shall promptly provide adequate and competent replacement. If the Operator fails to comply with this clause, without prejudice to any other provisions of this Contract and other rights and remedies of Government, Government may deduct a sum or sums calculated in accordance with Clause 91A.2 and Clause 91A.3 below from the monthly Management Fee or any other sum then due or which at any time thereafter may become due from Government to the Operator under this Contract or any other contract(s) made between the Operator and Government.

91A.2 If the Operator fails to employ the required number of staff at a rank set out in the first column of Table 1 in Schedule XXIII in accordance with Clause 91A.1 above, without prejudice to any rights, actions or remedies that Government has or may have against the Operator, the Operator shall pay Government, as liquidated damages and not as penalty, the sum for shortfall of staff at each rank to be calculated in accordance with the formula below-

$$\begin{array}{ccccc} \text{The sum for} & & \text{No. of man-day of shortfall of} & & \text{Average monthly basic} \\ \text{shortage of} & & \text{staff at that rank in that} & & \text{salary of the corresponding} \\ \text{staff at a} & = & \text{calendar month falling within} & \times & \text{rank stated in last column of} \\ \text{rank in a} & & \text{the Term} & & \text{Table 1 of Schedule XXIII} \\ \text{calendar} & & & & \hline \text{month} & & & & \text{No. of days in that calendar} \\ & & & & \text{month} \end{array}$$

The number of man-day of short fall of staff at a rank shall be counted starting from the effective date of resignation or dismissal of the staff and ending at the date immediately before the date of assuming duty of a new competent replacement staff, both starting date and ending date are inclusive.

91A.3 If the Operator fails to ensure that the actual hour of a staff working on a shift is not less than the required working hour on that shift for a rank of staff as specified in Schedule XI in accordance with Clause 91A.1 above, without prejudice to any rights, actions or remedies that Government has or may have against the Operator, the Operator shall pay Government, as liquidated damages and not as penalty, the sums to be calculated as follows-

<u>For the Shortfall of working hour of each staff of</u>	<u>Amount</u>	
Assistant Operations Controller	HK\$	per hour or any part thereof
Operations Supervisor	HK\$	per hour or any part thereof
Traffic Officer I	HK\$	per hour or any part thereof
Traffic Officer II	HK\$	per hour or any part thereof
Senior Driver	HK\$	per hour or any part thereof
Toll Collector	HK\$	per hour or any part thereof
Electrical and Mechanical Technical Supervisor	HK\$	per hour or any part thereof
Electronics Technical Supervisor	HK\$	per hour or any part thereof
Electrical and Mechanical Technician	HK\$	per hour or any part thereof
Electronics Technician	HK\$	per hour or any part thereof

## SCHEDULE XXIII

### Details on Remuneration for Designated Outgoing Operator's Staff for the First Contract Year

#### Part I - Average Monthly Basic Salary

Table 1

Column 1	Column 2	Column 3
Rank of Staff	Number of Outgoing Operator's Staff at the rank in Column 1 given with first offer of employment for the purposes of the Contract	Average Monthly Basic Salary for employing the Outgoing Operator's Staff at the rank in Column 1 who are being offered an employment
Assistant Operations Controller	20	HK
Operations Supervisor	36	HK
Training Supervisor	1	HK
Traffic Officer I	60	HK
Traffic Officer II	88	HK
Senior Driver	8	HK
Driver	7	HK
Toll Collector	28	HK
Highway Supervisor	5	HK
Deputy Highway Supervisor	12	HK
Painter	2	HK
Driver/ Plant Operator	12	HK
Safety Officer	2	HK
System Analyst	2	HK
Electrical and Mechanical Technical Supervisor	15	HK
Electronics Technical Supervisor	10	HK
Vehicle Technical Supervisor	3	HK
Electrical and Mechanical Technician	53	HK
Electronics Technician	35	HK
Vehicle Technician	21	HK
Technical Clerk	1	HK
Software Programmer	2	HK
Assistant Building Officer	1	HK



**HIGHWAYS DEPARTMENT**  
5<sup>TH</sup> FLOOR, HO MAN TIN GOVERNMENT OFFICES,  
88 CHUNG HAU STREET, HOMANTIN,  
KOWLOON HONG KONG  
Web site : <http://www.hyd.gov.hk>

CONFIDENTIAL

路政署

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何文田政府合署五樓  
網址 : <http://www.hyd.gov.hk>

[ ]

本署檔號 Our Ref.: ( ) in HyD BSCA/17-7/TD05/12/M15/113(E/H2)  
來函檔號 Your Ref.: CB4/PAC/R70  
電話 Tel. No.: 2762 4960  
圖文傳真 Fax No.: 2714 5216

26 June 2018

Clerk to Public Accounts Committee  
Legislative Council,  
Legislative Council Complex  
1 Legislative Council Road  
Central, Hong Kong

(Attn: Mr Anthony CHU)

Dear Sirs,

**Public Accounts Committee****Consideration of Chapter 8 of Audit's Report No. 70****Sha Tin Section of Route 8**

Thank you for your letter of 12 June 2018. The requested response and information set out in your letter are attached at the Annex.

Yours faithfully,

(Albert LIU)  
for Director of Highways

**c.c.**

STH	(Attn: Ms CHUNG Sui-kei, Judy)
SDEV	(Attn: Mr CHAN Fuk-yiu, Victor)
DCED	(Attn: Mr LAM Tat-ming, Terence)
SFST	(Attn: Ms HSIA Mai-chi, Margaret)
Director of Audit	(Attn.: Mr TEO Wing-on)
C for T	(Attn.: Mr SO Chun-chuen)
Director of ArchSD	(Attn.: Mr CHIU Ka-yin)
Director of EMSD	(Attn.: Mr LEE Hok-yin, Arthur)



ISO 9001:2008  
Certificate No. CC 1881



ISO 14001:2004  
Certificate No. CC 2634



**Public Accounts Committee**

**Consideration of Chapter 8 of the Director of Audit's Report No. 70**

**Sha Tin Section of Route 8**

*(a) according to paragraph 4.11(c) of the Audit Report, a Government Monitoring Team, comprising officers from four departments, namely, TD, HyD, EMSD and ArchSD, is responsible for monitoring the TSCA operator's performance. In this connection, please advise:*

- (i) the responsibilities and purview of each department. Is there any written document delineating such responsibilities or purview. If yes, please provide a copy of such document;*
- (ii) whether each department had, since the TSCA MOM contract was awarded to the current operator, held meetings with the current operator and/or other relevant departments, so as to monitor and review the performance of the operator. If yes, please provide dates and records of the meetings; if not, why not;*
- (iii) is there a laid-down mechanism for each department to monitor the performance of the contractor on areas under the purview of each department. If yes, please provide a copy of such mechanism; if not, how will the department carry out its monitoring responsibilities;*

(i) HyD is responsible for overseeing the maintenance of highway facilities in TSCA. As far as the MOM contract is concerned, the division of responsibilities and purview among members of the Government Monitoring Team (GMT) was not specified in the original contract. HyD notes that TD, in collaboration with other GMT members including HyD, has consolidated a list of "GMT Members Monitoring Responsibility for TSCA" specifying each GMT member's responsibilities in monitoring the operator. TD has also issued the detailed list to the TSCA operator on 13 March 2018 and 26 March 2018 to supplement the current TSCA MOM contract. Correspondence issued by TD copied to HyD is attached in **Appendix A**.

(ii) HyD has held regular progress meetings with the TSCA operator to monitor and review the operator's performance since the commencement of the TSCA MOM contract. The items discussed in the regular progress

meetings include provision of personnel, safety and hygiene, repairs to damage on highway facilities in traffic accident, enquiries and complaints from public about highway facilities, third parties working in TSCA, highway facilities inspection and report submissions, scheduled highway maintenance works and non-scheduled highway maintenance works. Dates of the regular progress meetings are shown in **Appendix B**. In addition to the regular progress meetings, HyD has also held separate discussions with the TSCA operator to monitor the progress and details of the maintenance works of highway facilities.

- (iii) The requirements on TSCA highway maintenance have been specified in the TSCA MOM contract, and HyD has monitored the performance of the TSCA operator on areas under HyD's purview according to the requirements given in the TSCA MOM contract. HyD has held regular progress meetings with the TSCA operator to discuss their performance in respect of their highway maintenance works. The TSCA operator is also required to submit monthly highway maintenance reports for checking by HyD, which includes highway inspection records, proposed maintenance works and progress. HyD has also carried out on-site spot checks on TSCA operator's inspection, scheduled maintenance works and non-scheduled maintenance works.

***(b) with reference to paragraphs 4.16 to 4.18 and Table 17 of the Audit Report, please advise:***

- (i) whether EMSD and HyD had conducted any surprise check or record checking so as to monitor the manning level of E&M staff and highway maintenance staff under their respective purview;***
- (ii) between September 2013 and January 2017, whether there was staff shortfall of TSCA operator not subject to LD. If yes, the details;***

(i) To monitor the manning level of the TSCA operator's highway maintenance staff, HyD has requested the TSCA operator to report the manning level in the immediate preceeding month, which is submitted for HyD's checking on a monthly basis.

(ii) It is noted that between September 2013 and January 2017, the TSCA operator's shortfall in highway maintenance staff not subject to LD was as below:

<b>Shortfall of highway maintenance staff not subject to LD</b>	<b>Shortfall Period</b>
Deputy Highway Maintenance Engineer (Roadwork)	19.9.2013 – 6.11.2013
2nd Deputy Highway Maintenance Engineer (Structures)	19.9.2013 – 11.8.2014 25.4.2016 – 16.10.2016

- (c) *according to paragraph. 4.23 of the Audit Report, out of the total manning level of 483 staff under the TSCA MOM contract, 80 staff are "leave relief" staff, and provided that the TSCA operator could deploy sufficient and competent manpower to each of the required duty shifts, the manning level requirement for "leave relief" staff is included in the contract for reference purpose only. In substance, the operator is required to deploy a total of 403 staff, of which 60 staff are not subject to LD for any shortfall. In this connection, what are the follow-up actions/sanctions that could be taken by the relevant departments if there is a shortfall in the staff that are not subject to LD for any shortfall;*

As summarized in Table 16 of the Audit Report, there is no “leave relief” staff under HyD’s purview. When there was a shortfall of highway maintenance staff (regardless of being subject to LD or not), HyD would urge the TSCA operator in writing to provide replacement as soon as possible and closely monitor the TSCA operator’s performance to see whether it has been affected by the staff shortfall. HyD will reflect any shortfall in highway maintenance staff in the TSCA operator’s quarterly performance report on the aspect of highway maintenance.

(d) *at the public hearing, members were informed that HyD and TD had stationed staff at the Sha Tin Section. Please provide the number, ranking and job duties of these staff;*

The technical members of TSCA GMT HyD are summarized below:

No.	Ranking	Job Duties
1	Senior Engineer/Structures	<ul style="list-style-type: none"> <li>• Monitoring the performance of the TSCA operator in respect of the maintenance of TSCA highway structures;</li> <li>• Provide technical comments on the maintenance of TSCA highway structures;</li> <li>• Oversee the repair and improvement works relating to TSCA highway structures;</li> <li>• Provide input on general matters (e.g. district matters) relating to TSCA highway structures;</li> <li>• Conduct joint inspections with the TSCA operator relating to TSCA highway structures;</li> <li>• Carry out safety audit and quality assurance checks relating to TSCA highway structures;</li> <li>• Prepare inspection and audit reports relating to TSCA highway structures;</li> <li>• Handle public complaints relating to TSCA highway structures; and</li> <li>• Handle filming applications in the TSCA.</li> </ul>
2	Engineer/Structures	
1	Inspector of Works/Structures	
1	Assistance Inspector of Works/Structures	

<b>No.</b>	<b>Ranking</b>	<b>Job Duties</b>
0.5 1.5 1 0.5	Senior Engineer/Highways Engineer/Highways Inspector of Works/Highways Assistance Inspector of Works/ Highways	<ul style="list-style-type: none"> <li>• Monitoring the performance of the TSCA operator in respect of the maintenance of TSCA roads and slopes;</li> <li>• Provide technical comments on the maintenance of TSCA roads and slopes;</li> <li>• Oversee the repair and improvement works relating to TSCA roads and slopes;</li> <li>• Provide input on general matters (e.g. district matters) relating to TSCA road and slopes</li> <li>• Conduct joint inspections with the TSCA operator relating to TSCA road and slopes</li> <li>• Carry out safety audit and quality assurance checks relating to TSCA road and slopes;</li> <li>• Prepare inspection and audit reports relating to TSCA road and slopes;</li> <li>• Handle public complaints relating to TSCA roads and slopes;</li> <li>• Handle TSCA road works permit applications; and</li> <li>• Handle contract administration matters relating to TSCA GMT HyD.</li> </ul>

<b>No.</b>	<b>Ranking</b>	<b>Job Duties</b>
1 1 1 1	Engineer/Emergency Project Coordinator/Emergency Inspector of Works/Emergency Assistance Inspector of Works/Emergency	<ul style="list-style-type: none"> <li>• Handle emergency incidents in TSCA relating to TSCA highway structures, roads and slopes;</li> <li>• Implement emergency inspections and emergency works relating to TSCA highway structures, roads and slopes;</li> <li>• Assist in dealing matters relating to highway maintenance works in TSCA; and</li> <li>• Handle administration works relating to highway maintenance works in TSCA.</li> </ul>
0.5 1	Senior Engineer/Bridge Technical Advisory Engineer/Bridge Technical Advisory	<ul style="list-style-type: none"> <li>• Monitoring the performance of the TSCA operator in respect of the Wind and Structural Health Monitoring System (WASHMS) and other bridge health monitoring related matters for the Stonecutters Bridge (SCB) in TSCA;</li> <li>• Provide technical advice in respect of structural design and analysis, aerodynamic and seismic assessments, and structural health monitoring of long-span bridges and other major highway structures;</li> <li>• Collaboration with universities on research studies regarding bridge engineering; and</li> <li>• Handle visits to the TSCA and provide technical briefing to visitors.</li> </ul>

*(e) with reference to paragraph 4.21 (c) of the Audit Report, whether HyD had provided TD with records of the monthly highway maintenance meetings;*

The regular meeting between HyD and TSCA operator were solely related to the maintenance of highway facilities. TD did not request HyD to provide the records for reference.



***(f) with reference to paragraph 4.22 of the Audit Report, have HyD and ArchSD evaluated the performance of the operator in the area of work under their respective purview and inform TD of the assessment results. If yes, please provide the frequency of the evaluations and assessments; if not, why not and whether HyD and ArchSD would consider conducting such evaluations and assessments;***

HyD has in collaboration with TD evaluated the performance of the TSCA operator on the aspect of highway maintenance on a quarterly basis and informed TD of the assessment result of the period from 19 December 2017 to 18 March 2018 for TD (i.e. the contractor managing party of TSCA MOM contract) to compile the overall performance report of the TSCA operator, and will continue to do so on a quarterly basis.

***(g) with reference to paragraphs 4.33 and 4.34 of the Audit Report, please advise/provide:***

- (i) records of imposing and collecting LD from the operator;;***
- (ii) whether TD, HyD, EMSD and ArchSD have cross-checked the accuracy of the information/records submitted by the operator in relation to the calculation of LD;***

- (i) The amounts of LD payable by the TSCA operator for the shortfall of highway maintenance staff since commencement of the current TSCA MOM contract are summarized below:

<b>Period</b>	<b>LD Amount</b>	<b>Deduction</b>
19.9.2013 – 30.9.2014	\$0.98M	Deducted from the Monthly Management Fee of Highway Maintenance for Jun 2017
1.10.2014 – 31.10.2015	\$0.17M	Deducted from the Monthly Management Fee of Highway Maintenance for Sep 2017
1.11.2015 – 31.12.2016	\$0.13M	Deducted from the Monthly Management Fee of Highway Maintenance for Dec 2017
1.1.2017 – 30.6.2017	\$0.05M	Deducted from the Monthly Management Fee of Highway Maintenance for Sep 2017
1.7.2017 – 30.11.2017	\$0.04M	Deducted from the Monthly Management Fee of Highway Maintenance for Jan 2018
1.12.2017 – 31.5.2018	No shortfall subject to LD	N/A

- (ii) To ensure that the records provided are correct and the staff are qualified personnel, HyD has verified all relevant records provided by the TSCA operator for calculating the LD in respect of the shortage of highway maintenance staff (including staff reports, staff qualifications and relevant supporting documents, etc.), and has required the operator to provide supplementary documents when needed. HyD has also copied all correspondence regarding the shortfall of highway maintenance staff and the calculation of LD to TD for their reference.



26/03/2018 17:21

File Ref HyD BSCA/17-7/TD05/12/M15/010 EDMS No 5MWL

**Re: Agreement for Management, Operation and Maintenance ("MOM")  
of Tsing Sha Control Area ("TSCA") Addendum to Schedule I and III**

Yee Yeung TSANG to: kelvin.sze@sercolam.com

Cc: &HYD/BSTR/E/H2, &TD/MS/TTM4, ETSCS51, ETSCS52...

From: Yee Yeung TSANG/TD/HKSARG@TD  
To: Kelvin Sze <kelvin.sze@sercolam.com>,  
Cc: &HYD/BSTR/E/H2@HYD, &TD/MS/TTM4@TD, ETSCS51/HQ/EMSD@EMSD,  
ETSCS52/HQ/EMSD@EMSD, Ka Yin CHIU/ARCHSD/HKSARG@ARCHSD, Tansan  
WONG/ARCHSD/HKSARG@ARCHSD, "sk.lai@serco-hk.com" <sk.lai@serco-hk.com>,

History: This message has been forwarded.

Dear Kelvin,

Further to the letter sent to you on 13.3.2018 attached, we take this opportunity to extract relevant information in the MOM agreement for you and parties copied easy reference on the major aspects under monitoring of TD:

**Management**

- (i) ensure a high degree of security within the TSCA; and
- (ii) minimize the requirement for closure of any traffic lanes or Highways for any reason, including routine inspection, maintenance, cleaning and repair so as to minimize traffic delay.

**Operation**

- (i) regularly patrol, monitor and control all activities within the TSCA;
- (ii) ensure the efficient collection of Tolls;
- (iii) comply with all instructions relating to safety and other applicable standards which may from time to time be issued by Government after consultation with the Operator or which may be imposed by law;
- (iv) conduct vehicle rescue, recovery and fire-fighting operations in accordance with the Operating Standards and Operating Procedures; and
- (v) co-operate with the operator of the Tsing Ma Control Area in a manner as required 1 under Clause 66 and Schedule V to the satisfaction of the C for T and the Director of Highways, and to ensure a smooth flow of traffic to and from or on infrastructures situated within or adjoining or passing through the TSCA.

Thank you for your attention.



20180313 Supplement notification letter\_v2.pdf

Regards,  
Ian TSANG  
TD

By Email and fax (3140 1315)

Our Ref. TD TS/151/205/22C  
Tel. No. 2829 5536  
Fax. No. 2519 8094

13 March 2018

Mr. Kelvin Sze  
Contract Director  
Serco Lam JV  
Suite 1101, Sino Plaza  
255-257 Gloucester Road  
Causeway Bay  
Hong Kong

Dear Sir,

**Agreement for Management, Operation and Maintenance (“MOM”)  
of Tsing Sha Control Area (“TSCA”)  
Addendum to Schedule I and III**

The Government may from time to time appoint a Government Monitoring Team (“GMT”) comprising officers from various Government departments to be responsible for monitoring and auditing the Operator’s performance in accordance to the major buildings, structures, facilities and equipment to be managed, operated and maintained by the operator and scheduled maintenance works requirements set out in Schedule I and III of Agreement for MOM of TSCA respectively.

To supplement Schedule I and III, we have consolidated a detailed list of “GMT Members Monitoring Responsibility for TSCA” at **Annex**. Please contact the responsible departments for issues related to these items on the list accordingly.

Thank you for your attention.

Yours faithfully,



(Ian TSANG Yee-yeung)  
for Commissioner for Transport

**Detailed List on Responsibilities of Government Monitoring Team Members in  
Monitoring the Performance of the Operator of Tsing Sha Control Area**

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18	Waterworks Installations for buildings (after water meter of buildings)	ArchSD

\*according to SIMAR's record of maintenance agents

b.c.c.

External

Serco Group (HK) Ltd. (Managing Director: Mr. John Hesketh)	] – fax: 2571 7214
Serco Group (HK) Ltd. (Operations Manager)	]
Director of HyD (Attn.: SE/H, E/H2)	] – by email
Director of EMSD (Attn.: SE/TSCS5, E/TSCS5/1, E/TSCS5/2)	]
Arch SD (Attn.: SPSM/WTS&ST, PSM/ST-W)	]

Internal

CMC	– by email
CTM1	] – by email
TTM1	]
TTM4	]

**Dates of Regular Progress Meetings between HyD and TSCA Operator**

<b>Meeting</b>	<b>Date</b>
1st Progress Meeting	25.10.2013
2nd Progress Meeting	22.11.2013
3rd Progress Meeting	18.12.2013
4th Progress Meeting	22.1.2014
5th Progress Meeting	26.2.2014
6th Progress Meeting	19.3.2014
7th Progress Meeting	23.4.2014
8th Progress Meeting	23.5.2014
9th Progress Meeting	18.6.2014
10th Progress Meeting	16.7.2014
11th Progress Meeting	20.8.2014
12th Progress Meeting	23.9.2014
13th Progress Meeting	22.10.2014
14th Progress Meeting	19.11.2014
15th Progress Meeting	15.12.2014
16th Progress Meeting	21.1.2015
17th Progress Meeting	16.2.2015
18th Progress Meeting	18.3.2015
19th Progress Meeting	22.4.2015
20th Progress Meeting	20.5.2015
21st Progress Meeting	17.6.2015
22nd Progress Meeting	23.7.2015
23rd Progress Meeting	20.8.2015
24th Progress Meeting	23.9.2015
25th Progress Meeting	14.10.2015
26th Progress Meeting	17.11.2015
27th Progress Meeting	16.12.2015
28th Progress Meeting	20.1.2016
29th Progress Meeting	17.2.2016
30th Progress Meeting	15.3.2016
31st Progress Meeting	20.4.2016
32nd Progress Meeting	16.5.2016
33rd Progress Meeting	27.6.2016
34th Progress Meeting	20.7.2016

**Appendix B**

<b>Meeting</b>	<b>Date</b>
35th Progress Meeting	24.8.2016
36th Progress Meeting	21.9.2016
37th Progress Meeting	28.10.2016
38th Progress Meeting	28.11.2016
39th Progress Meeting	23.12.2016
40th Progress Meeting	23.1.2017
41st Progress Meeting	24.2.2017
42nd Progress Meeting	29.3.2017
43rd Progress Meeting	26.4.2017
44th Progress Meeting	29.5.2017
45th Progress Meeting	26.7.2017
46th Progress Meeting	29.9.2017
47th Progress Meeting	10.11.2017
48th Progress Meeting	6.12.2017
49th Progress Meeting	26.1.2017
50th Progress Meeting	14.2.2018
51st Progress Meeting	9.3.2018
52nd Progress Meeting	6.4.2018
53rd Progress Meeting	10.5.2018
54th Progress Meeting	6.6.2018



# 機電工程署 EMSD

香港特別行政區政府 機電工程署  
香港九龍啟成街3號  
Electrical and Mechanical Services Department  
Government of the Hong Kong Special Administrative Region  
3 Kai Shing Street, Kowloon, Hong Kong  
www.emsd.gov.hk

Our reference 本署檔號 : EMSD CRA/4-35/2/1 Part 4(E.5)(L/M)

Telephone 電話號碼 : 2808 3847

Your reference 來函檔號 : CB4/PAC/R70

Facsimile 圖文傳真 : 2890 7493

By Fax (2543 9197)

22 June 2018

Public Accounts Committee, Legislative Council  
Legislative Council Complex  
1 Legislative Council Road  
Central, Hong Kong

(Attn.: Mr Anthony CHU)

Dear Mr CHU,

**Public Accounts Committee**  
**Consideration of Chapter 8 of the Director of Audit's Report No. 70**  
**Sha Tin Section of Route 8**

Thank you for your letter of ref. CB4/PAC/R70 dated 12 June 2018 requesting our responses to the questions listed in the Appendix of the letter.

Please find our responses to the questions in the attached Appendices. The soft copy of our responses has also been sent to the e-mail addresses listed in your letter separately.

Yours sincerely,



(WONG Sek Cheung)  
for Director of Electrical and Mechanical Services

Encl.

- c.c. Secretary for Development (Fax no.: 2147 3691)
- Secretary for Transport and Housing (Fax no.: 2537 6519)
- Secretary for Financial Services and the Treasury (Fax No.: 2147 5239)
- Commissioner for Transport (Fax no.: 2802 2361)
- Director of Civil Engineering and Development (Fax no. 2246 8708)
- Director of Highways (Fax no.: 2714 5203)
- Director of Architectural Services (Fax no.: 2810 7341)
- Director of Audit (Fax No.: 2583 9063)

**Public Accounts Committee  
Consideration of Chapter 8  
of the Director of Audit's Report No. 70 ("Audit Report")  
Sha Tin Section of Route 8  
Responses from the EMSD**

*(IV) For the Electrical and Mechanical Services Department  
The Administration was requested to provide the following information:*

*(a) according to paragraph 4.11(c) of the Audit Report, a Government Monitoring Team, comprising officers from four departments, namely, TD, HyD, EMSD and ArchSD, is responsible for monitoring the TSCA operator's performance. In this connection, please advise:*

*(i) the responsibilities and purview of each department. Is there any written document delineating such responsibilities or purview. If yes, please provide a copy of such document;*

**Answer:** The Electrical and Mechanical Services Department ("EMSD") provides the Transport Department ("TD") with professional advisory, technical supports and monitoring services relating to electrical and mechanical (E&M) systems in the Management, Operation and Maintenance (MOM) contract for the Tsing Sha Control Area (TSCA). The EMSD monitors the operator's performance in operation and maintenance of all E&M systems and equipment. The responsibilities of the EMSD are stated in the Service Level Agreement ("SLA") between the EMSD and TD. Extract of the SLA delineating the EMSD's responsibilities is attached in Appendix 2.

*(ii) whether each department had, since the TSCA MOM contract was awarded to the current operator, held meetings with the current operator and/or other relevant departments, so as to monitor and review the performance of the operator. If yes,*

*please provide dates and records of the meetings; if not, why not;*

**Answer:** The EMSD has been holding meetings with the TSCA operator jointly with TD and HyD on a bi-monthly basis to monitor the operation and maintenance of E&M systems and review the performance of the operator since the commencement of the current TSCA MOM contract. The dates of the joint meetings held are as tabulated below:

Meeting No.	Date	Meeting No.	Date
1	24 Oct 2013	15	18 Feb 2016
2	19 Dec 2013	16	21 Apr 2016
3	20 Feb 2014	17	23 Jun 2016
4	17 Apr 2014	18	26 Aug 2016
5	19 Jun 2014	19	20 Oct 2016
6	21 Aug 2014	20	22 Dec 2016
7	23 Oct 2014	21	16 Feb 2017
8	18 Dec 2014	22	20 Apr 2017
9	12 Feb 2015	23	22 Jun 2017
10	23 Apr 2015	24	24 Aug 2017
11	25 Jun 2015	25	19 Oct 2017
12	20 Aug 2015	26	21 Dec 2017
13	22 Oct 2015	27	2 Mar 2018
14	17 Dec 2015		

(iii) *is there a laid-down mechanism for each department to monitor the performance of the contractor on areas under the purview of each department. If yes, please provide a copy of such mechanism; if not, how will the department carry out its monitoring responsibilities;*

**Answer:** The EMSD has resident staff at TSCA to monitor the performance of the operator. In addition to the joint meeting as mentioned in (ii) above, the EMSD also checks the monthly reports submitted by the operator and conducts site inspections to assess the performance of the operator. Furthermore, the EMSD prepares quarterly

**performance reports to reflect the operator's performance.**

*(b) with reference to paragraphs 4.16 to 4.18 and Table 17 of the Audit Report, please advise:*

*(i) whether EMSD and HyD had conducted any surprise check or record checking so as to monitor the manning level of E&M staff and highway maintenance staff under their respective purview;*

**Answer:** The EMSD has been checking monthly reports submitted by the operator, conducting surprise inspections to check the attendance records of the operator's E&M staff and to count the number of operator's E&M staff on site, in order to monitor whether the operator has complied with the E&M staff manning level requirements as specified in the MOM contract.

*(ii) between September 2013 and January 2017, whether there was staff shortfall of TSCA operator not subject to LD. If yes, the details;*

**Answer:** In the E&M staff manning level requirements of the TSCA MOM contract, there are five staff not subject to LD. According to the monthly reports submitted by the operator, the shortfall of these staff (from September 2013 to January 2017) is tabulated below:

<b>Rank</b>	<b>Shortfall Period</b>
<b>Engineer Manager (1 No.)</b>	<b>Jan 2015</b>
<b>Electrical &amp; Mechanical Engineer (1 No.)</b>	<b>Dec 2013 to Aug 2014 and May 2016 to Oct 2016</b>
<b>Electronics Engineer (1 No.)</b>	<b>No Shortfall</b>
<b>Vehicle Engineer (1 No.)</b>	<b>No Shortfall</b>
<b>Software Engineer (1 No.)</b>	<b>Sep 2013 and Jan 2015 to Mar 2015</b>

(c) *according to paragraph 4.23 of the Audit Report, out of the total manning level of 483 staff under the TSCA MOM contract, 80 staff are “leave relief” staff, and provided that the TSCA operator could deploy sufficient and competent manpower to each of the required duty shifts, the manning level requirement for “leave relief” staff is included in the contract for reference purpose only. In substance, the operator is required to deploy a total of 403 staff, of which 60 staff are not subject to LD for any shortfall. In this connection, please advise:*

(i) *what are the follow-up actions/sanctions that could be taken by the relevant departments if there is a shortfall in the staff that are not subject to LD for any shortfall;*

**Answer:** Although there are five staff members as mentioned in (b)(ii) above who are not subject to LD, the EMSD has also been closely monitoring the manning level of such staff members. Whenever there was shortfall of these staff members identified, the EMSD would urge the operator to rectify the shortfall promptly. To address this issue, the EMSD in collaboration with TD will study whether LD should be applied to all level of E&M staff in formulating the contract terms of the next MOM contract.

- (ii) *at the public hearing, Acting Director of Electrical and Mechanical Services said that the contract allowed the contractor to outsource some E&M works if it could not employ sufficient E&M staff to make up the shortfall. Commissioner for Transport said that despite the outsourcing, LD would still be imposed if there was a shortfall of staff subject to LD. Please clarify the seemingly conflicting statements and provide an extract of the relevant contract provisions on LD;*

**Answer:** According to the TSCA MOM contract, the operator is allowed to outsource part of the scheduled E&M maintenance works when needed, with the prior consent of the TD and EMSD. The contract also stipulates that if the operator fails to employ the required number of E&M staff (non-key personnel), LD shall be imposed to the operator. The relevant LD clauses in the MOM contract are extracted in Appendix 3.

Based on the legal advice obtained from the Department of Justice (DoJ) by the TD, the LD calculation method and principle was agreed in early 2017. The outsourcing of some E&M maintenance works by the operator should be treated as compensation of part of the E&M staff shortfall. In other words, the outsourcing arrangement is equivalent to deployment of certain number of E&M staff at certain ranks by the operator. However, if shortfall of E&M staff still exists after outsourcing some E&M maintenance works, LD will be imposed to the operator.

- (d) *with reference to Table 17 and paragraph 4.27(a) of the Audit Report, please advise:*

- (i) *the reasons for the shortfall of E&M staff;*

**Answer:** According to the information provided by the TSCA

operator, they encountered difficulties in employing E&M engineering staff due to the tight employment market resulted from a high demand for E&M staff in a number of new or on-going major infrastructure projects in recent years.

- (ii) *whether EMSD has assessed the impact on the operation of TSCA by the shortfall of E&M staff, in particular the shortfall of staff in the rank of “E&M technicians”. If yes, the details; if not, why not;*

**Answer:** The operator has been taking mitigation measures, including (i) arranging staff to work overtime to compensate for the vacancies as far as possible and (ii) outsourcing part of the maintenance works. With the said mitigation measures in place and the EMSD’s close monitoring of the operator’s daily maintenance works, the operation and performance of the E&M systems in TSCA has in general remained satisfactory throughout the MOM contract.

- (e) *with reference to paragraph 4.33 and 4.34 of the Audit Report, please advise/provide:*

- (i) *as of December 2017, TD and EMSD had not ascertained the amount of LD from 1 March 2014 to 31 December 2016 and 1 October to 31 December 2017. Why was there such a delay?*

**Answer:** The TSCA MOM contract is the first contract of its kind to include LD provisions for the manning level. There was dispute from the operator as to how the LD should be imposed such as certain E&M maintenance works have been outsourced by him to compensate for part of the E&M staff shortfall. From November 2014 to January 2017, the EMSD had assisted the TD to seek legal advice from DoJ and resolve the dispute with the operator as to how the LD should be imposed. Upon settlement of the dispute, the

**EMSD began to calculate and provide the TD with the ascertained amount of LD in batches, from May 2017 to February 2018, for the period from the commencement of the TSCA MOM contract (i.e. September 2013) to December 2017. Based on the EMSD's ascertained amounts of LD, the TD had collected LD due to shortage of E&M staff from the operator for the said period in batches between May 2017 and March 2018.**

*(ii) records of imposing and collecting LD from the operator;*

**Answer: The TD will provide the Public Accounts Committee records of imposing and collecting LD from the operator.**

*(iii) whether TD, HyD, EMSD and ArchSD have cross-checked the accuracy of the information/records submitted by the operator in relation to the calculation of LD.*

**Answer: The EMSD has been assisting the TD to review and verify the calculation of LD to be imposed on the operator due to shortfall of E&M staff. The EMSD's work includes (i) checking of the calculation of the LD to be imposed, monthly reports, attendance records and relevant supporting documents submitted by the operator, (ii) cross-checking the operator's records against the EMSD's surprise check records, and (iii) requesting the operator to submit supplementary information where necessary.**



Extract of the Service Level Agreement between the EMSD and TD  
(April 2012 to March 2018) Delineating the Responsibilities of the EMSD

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1. Introduction

1.1 Part 1 of this SLA specifies the scope of services to be provided by EMSTF to TD on professional advisory, technical support and monitoring services at the following Control Areas and Tunnel Areas:-

- a) TMCA  
(for the period from 1 April, 2012 to 31 March, 2018)
- b) Tunnel Area of Aberdeen Tunnel, Kai Tak Tunnel, Lion Rock Tunnel, Shing Mun Tunnels, Tseung Kwan O Tunnel and Cross Harbour Tunnel  
(for the period from 1 April, 2012 to 31 March, 2018)
- c) TSCA  
(for the period from 1 April, 2012 to 31 March, 2018<sup>3</sup>)

1.2 The above Control Areas and Tunnel Areas are the same as that defined in the respective Management, Operation and Maintenance (MOM) Contracts. In addition, Systems/Tunnel Equipment (including "Systems" in Control Areas and "Tunnel Equipment" in Tunnel Areas) has the same meaning as that stipulated in the respective MOM Contracts.

2. Scope and Description of Services

In respect of Systems/Tunnel Equipment:-

- 2.1 To witness testing and commissioning and to advise on defects, outstanding and improvement works from operation, maintenance, system performance, safety and system reliability points of view;
- 2.2 To liaise and coordinate with the Operators<sup>4</sup> to attend operation and maintenance training to prepare for the provision of effective operation of the Control Areas and Tunnel Areas;
- 2.3 To attend relevant meetings to discuss progress of operation and maintenance activities so as to ensure smooth operation of the Control Areas and Tunnel Areas;
- 2.4 To monitor the Operators' preparation works and liaise with the Operators for taking up the operation and maintenance works on the Systems/Tunnel Equipment, and to advise TD on the Operators' proposals;
- 2.5 To monitor the Operators' performance and quality of work on Systems/Tunnel Equipment, including computer hardware and software, through examination of reports, log-books, and inspection on site; and to provide technical advice on contractual penalties, claims and disputes;

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<sup>3</sup> The current SLA for TSCA signed between TD and EMSTF in 2008 covered the period from 21 Mar 2008 to 31 Mar 2013. The commencement date of this part of the SLA for TSCA is revised to 1 Apr 2012 to make it in line with the other SLAs.

<sup>4</sup> Operators mean the "Operator" for Control Areas and "Contractor" for Tunnel Areas as stipulated in the respective MOM Contracts.

- 
- 2.6 To attend to emergency repair of Systems/Tunnel Equipment and conduct investigations on causes of failure for equipment breakdowns as situation warrants subject to mutual agreement between the Operators and the Government;
  - 2.7 To advise on the continued life expectancy of Systems/Tunnel Equipment, and to assess Operators' proposals for equipment/system replacement within the Control Areas and Tunnel Areas with unit cost exceeding a ceiling limit specified in the MOM Contracts, for which the Operators would be reimbursed;
  - 2.8 To monitor the Operators in updating the records on Systems/Tunnel Equipment, including the associated equipment manuals, spare parts inventory records and drawings;
  - 2.9 To provide professional advice on contingency plans, drills, fallbacks and responses to public enquiries or complaints as well as assisting TD in managing the Control Areas and Tunnel Areas in respect of operation and maintenance of Systems/Tunnel Equipment in case of emergencies;
  - 2.10 To assist in re-tendering exercises, if such case arises, for the MOM Contracts by providing technical inputs and advice on the preparation of contract documents and tender evaluation, including pre-qualification evaluation and similar evaluation for re-tendering exercise on the same contract;
  - 2.11 To arrange, coordinate, and witness technical assessment exercises on Systems/Tunnel Equipment to ensure smooth handing over of Systems/Tunnel Equipment to the Operators;
  - 2.12 To arrange, coordinate and witness final inspection for handing over the Systems/Tunnel Equipment from the Operators to the successor arising from renewal of the MOM Contracts;
  - 2.13 To monitor the Operators' performance and quality of work in maintenance of the Government Furnished Vehicles in Control Areas and Tunnel Areas as detailed in Appendix 1.
  - 2.14 To provide professional advice on the budgets submitted by Western Harbour Crossing and Tai Lam Tunnel;
  - 2.15 To provide professional advice on the equipment replacement submitted by Eastern Harbour Crossing and Tate's Cairn Tunnel; and
  - 2.16 To provide professional advice on mobile phone equipment / fixed telecommunication equipment installations.

**Extract of the LD Clauses in the MOM Contract**  
**(Salary information has been redacted)**

**91A. Deductions**

91A.1 The Operator shall ensure that at all times the actual number of his staff employed at a rank(s) set out in the first column of Table 1 in Schedule XXIII shall not be less than the number of staff at that rank(s) specified in Schedule XI and that in case a staff is working on shift at a rank which is set out in the first column of Table 1 in Schedule XXIII, the actual hour of that staff working on a shift shall not be less than the required working hour on that shift for that rank of staff as specified in Schedule XI. In the event of resignation, dismissal, or absence of any such staff during the shift hours set out in Schedule XI, the Operator shall promptly provide adequate and competent replacement. If the Operator fails to comply with this clause, without prejudice to any other provisions of this Contract and other rights and remedies of Government, Government may deduct a sum or sums calculated in accordance with Clause 91A.2 and Clause 91A.3 below from the monthly Management Fee or any other sum then due or which at any time thereafter may become due from Government to the Operator under this Contract or any other contract(s) made between the Operator and Government.

91A.2 If the Operator fails to employ the required number of staff at a rank set out in the first column of Table 1 in Schedule XXIII in accordance with Clause 91A.1 above, without prejudice to any rights, actions or remedies that Government has or may have against the Operator, the Operator shall pay Government, as liquidated damages and not as penalty, the sum for shortfall of staff at each rank to be calculated in accordance with the formula below-

$$\begin{array}{ccccc} \text{The sum for} & & \text{No. of man-day of shortfall of} & & \text{Average monthly basic} \\ \text{shortage of} & & \text{staff at that rank in that} & & \text{salary of the corresponding} \\ \text{staff at a} & = & \text{calendar month falling within} & \times & \text{rank stated in last column of} \\ \text{rank in a} & & \text{the Term} & & \text{Table 1 of Schedule XXIII} \\ & & & & \hline \text{calendar} & & & & \text{No. of days in that calendar} \\ \text{month} & & & & \text{month} \end{array}$$

The number of man-day of short fall of staff at a rank shall be counted starting from the effective date of resignation or dismissal of the staff and ending at the date immediately before the date of assuming duty of a new competent replacement staff, both starting date and ending date are inclusive.

91A.3 If the Operator fails to ensure that the actual hour of a staff working on a shift is not less than the required working hour on that shift for a rank of staff as specified in Schedule XI in accordance with Clause 91A.1 above, without prejudice to any rights, actions or remedies that Government has or may have against the Operator, the Operator shall pay Government, as liquidated damages and not as penalty, the sums to be calculated as follows-

<u>For the Shortfall of working hour of each staff of</u>	<u>Amount</u>
Assistant Operations Controller	HK\$ [REDACTED] per hour or any part thereof
Operations Supervisor	HK\$ [REDACTED] per hour or any part thereof
Traffic Officer I	HK\$ [REDACTED] per hour or any part thereof
Traffic Officer II	HK\$ [REDACTED] per hour or any part thereof
Senior Driver	HK\$ [REDACTED] per hour or any part thereof
Toll Collector	HK\$ [REDACTED] per hour or any part thereof
Electrical and Mechanical Technical Supervisor	HK\$ [REDACTED] per hour or any part thereof
Electronics Technical Supervisor	HK\$ [REDACTED] per hour or any part thereof
Electrical and Mechanical Technician	HK\$ [REDACTED] per hour or any part thereof
Electronics Technician	HK\$ [REDACTED] per hour or any part thereof

## SCHEDULE XXIII

### Details on Remuneration for Designated Outgoing Operator's Staff for the First Contract Year

#### Part I - Average Monthly Basic Salary

**Table 1**

Column 1	Column 2	Column 3
Rank of Staff	Number of Outgoing Operator's Staff at the rank in Column 1 given with first offer of employment for the purposes of the Contract	Average Monthly Basic Salary for employing the Outgoing Operator's Staff at the rank in Column 1 who are being offered an employment
Assistant Operations Controller	20	HK\$ [REDACTED]
Operations Supervisor	36	HK\$ [REDACTED]
Training Supervisor	1	HK\$ [REDACTED]
Traffic Officer I	60	HK\$ [REDACTED]
Traffic Officer II	88	HK\$ [REDACTED]
Senior Driver	8	HK\$ [REDACTED]
Driver	7	HK\$ [REDACTED]
Toll Collector	28	HK\$ [REDACTED]
Highway Supervisor	5	HK\$ [REDACTED]
Deputy Highway Supervisor	12	HK\$ [REDACTED]
Painter	2	HK\$ [REDACTED]
Driver/ Plant Operator	12	HK\$ [REDACTED]
Safety Officer	2	HK\$ [REDACTED]
System Analyst	2	HK\$ [REDACTED]
Electrical and Mechanical Technical Supervisor	15	HK\$ [REDACTED]
Electronics Technical Supervisor	10	HK\$ [REDACTED]
Vehicle Technical Supervisor	3	HK\$ [REDACTED]
Electrical and Mechanical Technician	53	HK\$ [REDACTED]
Electronics Technician	35	HK\$ [REDACTED]
Vehicle Technician	21	HK\$ [REDACTED]
Technical Clerk	1	HK\$ [REDACTED]
Software Programmer	2	HK\$ [REDACTED]
Assistant Building Officer	1	HK\$ [REDACTED]



# ARCHITECTURAL SERVICES DEPARTMENT 建築署

QUEENSWAY GOVERNMENT OFFICES, 66 QUEENSWAY, HONG KONG. 香港金鐘道六十六號金鐘道政府合署

來函檔號 Your Ref. : CB4/PAC/R70  
 本函檔號 Our Ref. : 10/1-125/34  
 電話號碼 Tel. No. : 2773 2233  
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By fax 2543 9197 and e-mail  
 (ahychu@legco.gov.hk, kmho@legco.gov.hk & pkwlai@legco.gov.hk)

22 June 2018

Mr Anthony CHU  
 Clerk to the Public Accounts Committee  
 Legislative Council  
 Legislative Council Complex  
 1 Legislative Council Road  
 Central, Hong Kong

Dear Mr CHU,

**Public Accounts Committee**  
**Consideration of Chapter 8 of the Director of Audit's Report No. 70**  
**Sha Tin Section of Route 8**

Thank you for your letter dated 12 June 2018 requesting response / information to facilitate the Public Accounts Committee's consideration of the above Chapter. Please find our reply below:

- (a) according to paragraph 4.11(c) of the Audit Report, a Government Monitoring Team, comprising officers from four departments, namely, TD, HyD, EMSD and ArchSD, is responsible for monitoring the TSCA operator's performance. In this connection, please advise:
- (i) the responsibilities and purview of each department. Is there any written document delineating such responsibilities or purview. If yes, please provide a copy of such document;
  - (ii) whether each department had, since the TSCA MOM contract was awarded to the current operator, held meetings with the current operator and/or other relevant departments, so as to monitor and review the performance of the operator. If yes, please provide dates and records of the meetings; if not, why not;

- (iii) Is there a laid-down mechanism for each department to monitor the performance of the contractor on areas under the purview of each department. If yes, please provide a copy of such mechanism; if not, how will the department carry out its monitoring responsibilities;
- (i) ArchSD is responsible for overseeing the maintenance of building structures in the TSCA. ArchSD notes that TD has in collaboration with GMT members consolidated a detailed list of “GMT Members Monitoring Responsibility for TSCA” specifying each GMT member’s responsibilities in monitoring the operator. TD has also issued the detailed list to the operator on 13 March 2018 to supplement the current TSCA MOM contract. ArchSD has accordingly monitored the performance of the operator and provided technical advice to TD in respect of the maintenance of building structures. Correspondence issued by TD and copied to ArchSD is attached in Appendix A.
- (ii) &
- (iii) Since the commencement of the TSCA MOM contract, the operator has provided ArchSD with the monthly building maintenance submissions for checking on building inspection records, proposed repairs and the corresponding progress. The operator’s performance in respect of building maintenance has been monitored through such checks and ArchSD would follow up with the operator to make good the deficiencies, if spotted, and report serious maintenance issues to TD for regulatory actions under the contract. Given that the performance of the operator has been monitored regularly, it is unnecessary for ArchSD to have meetings with the operator and/or other relevant departments. Ad hoc meetings would be arranged if situation warrants.
- (b) with reference to paragraphs 4.16 to 4.18 and Table 17 of the Audit Report, please advise:
- (i) the reasons for TD and ArchSD not monitoring the manning level of administrative and supporting staff and building maintenance staff respectively after the commencement of the TSCA MOM contract;
- (ii) between September 2013 and January 2017, whether there was staff shortfall of TSCA operator not subject to LD. If yes, the details;
- (i) The division of work among the GMT members was not specified in the TSCA MOM contract. The operator’s manning level of building maintenance staff therefore had not been checked earlier on but ArchSD has already checked the operator’s manning level of building maintenance and informed TD of the results for follow-up actions.
- (ii) Between September 2013 and January 2017, the TSCA operator’s

shortfall in building maintenance staff not subject to LD was as below:

- Shortfall in Building Manager from 16 February 2015 to 8 March 2015
- Shortfall in Building Services Engineer from 25 February 2014 to 29 February 2016 and 1 November 2016 to 31 January 2017
- Shortfall in Building Services Inspector from 11 November 2014 to 1 February 2015 and 7 February 2016 to 31 January 2017

- (c) with reference to paragraph 4.19 of the Audit Report, the measures taken/to be taken to ensure compliance of the TSCA operator with the manning level of administrative and supporting staff and the building maintenance staff;

ArchSD has conducted monthly check on the manning level of TSCA operator's building maintenance staff according to its submissions of staff attendance records and salary payrolls, etc. Random site checks on building maintenance staff's attendance had been and would be carried out in the inspection of TSCA.

- (d) according to paragraph 4.23 of the Audit Report, out of the total manning level of 483 staff under the TSCA MOM contract, 80 staff are "leave relief" staff, and provided that the TSCA operator could deploy sufficient and competent manpower to each of the required duty shifts, the manning level requirement for "leave relief" staff is included in the contract for reference purpose only. In substance, the operator is required to deploy a total of 403 staff, of which 60 staff are not subject to LD for any shortfall. In this connection, what are the follow-up actions/sanctions that could be taken by the relevant departments if there is a shortfall in the staff that are not subject to LD for any shortfall;

ArchSD has informed TD of the TSCA operator's shortfall in building maintenance staff (not subject to LD) for TD to take follow-up actions according to contract provisions. ArchSD has also reflected the shortfall in building maintenance staff in the TSCA operator's quarterly performance report on the aspect of building maintenance.

- (e) with reference to paragraph 4.22 of the Audit Report, have HyD and ArchSD evaluated the performance of the operator in the area of work under their respective purview and inform TD of the assessment results. If yes, please provide the frequency of the evaluations and assessments. If not, why not. Whether HyD and ArchSD would consider conducting such evaluations and assessments;

ArchSD has evaluated the performance of the TSCA operator on the aspect of building maintenance on a quarterly basis and advised TD (as contract administrator of TSCA MOM contract) for compiling the overall performance report on the TSCA operator. The assessment from 19 December 2017 to 18 March 2018 had been provided to TD.



(f) with reference to paragraphs 4.33 and 4.34 of the Audit Report, please advise/provide:

- (i) records of imposing and collecting LD from the operator;
  - (ii) whether TD, HyD, EMSD and ArchSD have cross-checked the accuracy of the information/records submitted by the operator in relation to the calculation of LD.
- (i) ArchSD has ascertained that there was shortfall in building maintenance staff that was subject to LD from 1 March to 14 September 2014 (about 6.5 months), and TD has collected LD of about \$0.12 million from the TSCA operator.
- (ii) ArchSD has checked the calculation of LD against the operator's staff attendance record and payrolls in order to ascertain the accuracy of the information and records for such calculation. Random site checks on the operator staff's attendance in relation to the calculation of LD would also be carried out.

Yours sincerely,



(HUI Chiu-kin )

for Director of Architectural Services

- c.c. Secretary for Transport and Housing (fax no. 2537 6519)  
Secretary for Development (fax no. 2147 3691)  
Director of Highways (fax no. 2714 5203)  
Director of Civil Engineering and Development (fax no. 2246 8708)  
Commissioner for Transport (fax no. 2802 2361)  
Director of Electrical and Mechanical Services (fax no. 2882 9042)  
Secretary for Financial Services and the Treasury (fax no. 2147 5239)  
Director of Audit (fax no. 2583 9063)

By Email and fax (3140 1315)

Our Ref. TD TS/151/205/22C  
Tel. No. 2829 5536  
Fax. No. 2519 8094

13 March 2018

Mr. Kelvin Sze  
Contract Director  
Serco Lam JV  
Suite 1101, Sino Plaza  
255-257 Gloucester Road  
Causeway Bay  
Hong Kong

Dear Sir,

**Agreement for Management, Operation and Maintenance ("MOM")  
of Tsing Sha Control Area ("TSCA")  
Addendum to Schedule I and III**

The Government may from time to time appoint a Government Monitoring Team ("GMT") comprising officers from various Government departments to be responsible for monitoring and auditing the Operator's performance in accordance to the major buildings, structures, facilities and equipment to be managed, operated and maintained by the operator and scheduled maintenance works requirements set out in Schedule I and III of Agreement for MOM of TSCA respectively.

To supplement Schedule I and III, we have consolidated a detailed list of "GMT Members Monitoring Responsibility for TSCA" at **Annex**. Please contact the responsible departments for issues related to these items on the list accordingly.

Thank you for your attention.

Yours faithfully,



(Ian TSANG Yee-yeung)  
for Commissioner for Transport

**Detailed List on Responsibilities of Government Monitoring Team Members in  
Monitoring the Performance of the Operator of Tsing Sha Control Area**

Item No.	Buildings, Structures, Facilities and Equipment	Responsible Department
1	Viaduct and Bridges (Structures)	HyD
2	Highways and Road Structures	HyD
3	Tunnel Structures	HyD
4	Footbridge in the Toll Plaza	HyD
5	Toll Booths	ArchSD
6	Administration Building (Nam Wan & Sha Tin)	ArchSD
7	Portal Buildings	ArchSD
8	Ventilation Buildings	ArchSD
9	Control Kiosks	ArchSD
10	Man-made Slopes	HyD / ArchSD*
11	Lighting (including high mast lighting)	EMSD
12	High mast lighting structures	HyD
13	Fire Service Installation and Equipment	EMSD
14	Sewage Treatment Plant (E&M Equipment)	EMSD
15	Landscaping	HyD
16	Software Maintenance for Traffic Control and Surveillance System (TCSS), Toll Collection System and E&M Systems with embedded software	EMSD
17	Wind And Structural Health Monitoring System (WASHMS) and Associated Operations	HyD
18	Waterworks Installations for buildings (after water meter of buildings)	ArchSD

\*according to SIMAR's record of maintenance agents

b.c.c.

External

Serco Group (HK) Ltd. (Managing Director: Mr. John Hesketh)	] – fax: 2571 7214
Serco Group (HK) Ltd. (Operations Manager)	]
Director of HyD (Attn.: SE/H, E/H2)	] – by email
Director of EMSD (Attn.: SE/TSCS5, E/TSCS5/1, E/TSCS5/2)	]
Arch SD (Attn.: SPSM/WTS&ST, PSM/ST-W)	]

Internal

CMC	– by email
CTM1	] – by email
TTM1	]
TTM4	]

## ACRONYMS AND ABBREVIATIONS

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ArchSD	Architectural Services Department
Audit	Audit Commission
Audit Report	Director of Audit's Report
B/Ds	Bureaux and departments
BAR	Blasting assessment report
BMX	Bicycle motocross
BQ	Bills of Quantities
CEDD	Civil Engineering and Development Department
Checking Guidelines	HQ/GN/02 Guidelines for checking submissions of consultants
CTB	Central Tender Board
DBO	Design-build-operate
DCs	District Councils
DEVB	Development Bureau
E&M	Electrical and mechanical
EMSD	Electrical and Mechanical Services Department
EN Tunnel	Eagle's Nest Tunnel
EOT	Extension of time
EPD	Environmental Protection Department
FC	Finance Committee
FSTB	Financial Services and the Treasury Bureau
Funding Scheme	Restored Landfill Revitalization Funding Scheme
GEO	Geotechnical Engineering Office
Geoguide 2	Geoguide 2 – Guide to Site Investigation
GMT	Government Monitoring Team
Guidance Note	Landfill Gas Hazard Assessment Guidance Note

## ACRONYMS AND ABBREVIATIONS

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ha	Hectares
HAB	Home Affairs Bureau
HAD	Home Affairs Department
HDC	Horizontal directional coring
HyD	Highways Department
LAD(W)	Legal Advisory Division (Works) of the Development Bureau
LandsD	Lands Department
LCSD	Leisure and Cultural Services Department
LD	Liquidated damages
LegCo	Legislative Council
LGP	Landfill gas flaring plant
LTP	Leachate treatment plant
mm	Millimetres
MOM	Management, operation and maintenance
NEC	New Engineering Contract
NGOs	Non-governmental organizations
PAH	Project Administration Handbook for Civil Engineering Works
PPVL	Pillar Point Valley Landfill
RMBs	Red minibuses
SDM	Structures Design Manual for Highways and Railways
Sha Tin Section	Sha Tin Section of Route 8
SI	Site investigations
STH	Sha Tin Heights
TD	Transport Department
the Pet Garden	Wan Po Road Pet Garden

## ACRONYMS AND ABBREVIATIONS

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TSCA	Tsing Sha Control Area
WPC(G)R	Water Pollution Control (General) Regulations (Cap. 358D)
WPCO	Water Pollution Control Ordinance (Cap. 358)