

CHAPTER 3

**Transport and Housing Bureau
Civil Engineering and Development Department**

**Management of the development
at Anderson Road project**

**Audit Commission
Hong Kong
10 June 2022**

This audit review was carried out under a set of guidelines tabled in the Provisional Legislative Council by the Chairman of the Public Accounts Committee on 11 February 1998. The guidelines were agreed between the Public Accounts Committee and the Director of Audit and accepted by the Government of the Hong Kong Special Administrative Region.

Report No. 78 of the Director of Audit contains 4 Chapters which are available on our website at <https://www.aud.gov.hk>



Audit Commission
6th Floor, High Block
Queensway Government Offices
66 Queensway
Hong Kong

Tel : (852) 2867 3423
Fax : (852) 2824 2087
E-mail : enquiry@aud.gov.hk

MANAGEMENT OF THE DEVELOPMENT AT ANDERSON ROAD PROJECT

Contents

	Paragraph
EXECUTIVE SUMMARY	
PART 1: INTRODUCTION	1.1 – 1.10
Audit review	1.11
Acknowledgement	1.12
PART 2: DESIGN OF FOOTBRIDGE SYSTEM UNDER THE PROJECT	2.1 – 2.7
Administration of design of footbridge system under the Project	2.8 – 2.25
Audit recommendations	2.26
Response from the Government	2.27
PART 3: CONTRACT MANAGEMENT	3.1
Management of slope, piling and defects rectification works under Contract A	3.2 – 3.13
Audit recommendations	3.14
Response from the Government	3.15

	Paragraph
Management of landscape softworks and establishment works under Contracts A and B	3.16 – 3.22
Audit recommendations	3.23
Response from the Government	3.24
 PART 4: MANAGEMENT OF FOOTBRIDGES A TO D AND POST-COMPLETION REVIEW	 4.1
Management of Footbridges A to D	4.2 – 4.11
Audit recommendations	4.12 – 4.14
Response from the Government	4.15 – 4.17
Post-completion review	4.18 – 4.19
Audit recommendation	4.20
Response from the Government	4.21
 Appendices	 Page
A : Contract expenditures (October 2021)	62
B : Consultations with parties concerned on design of footbridge system under the Project before tendering of Contract A (August 2006 to August 2007)	63 – 65
C : Interfacing problem between Contracts A and B	66
D : Acronyms and abbreviations	67

MANAGEMENT OF THE DEVELOPMENT AT ANDERSON ROAD PROJECT

Executive Summary

1. In 1996, the Government identified a potential site with an area of about 58 hectares between Anderson Road and Sau Mau Ping Road in East Kowloon for boosting land supply for housing. Upon completion of the planning and engineering feasibility study in October 1998 and a review on the findings of the study in January 2007, the feasibility of the planned development (including housing development, government, institution or community facilities, and district open spaces) at the site was confirmed. The development at Anderson Road project (the Project) covered the site formation and associated infrastructure works at the site. The Transport and Housing Bureau was the policy bureau for the Project and the Civil Engineering and Development Department (CEDD) was the works agent responsible for carrying out the works under the Project.

2. A total funding of \$3,543.4 million was approved by the Finance Committee of the Legislative Council between June 1997 and December 2007 for the Project. In August 1997 and May 2006, CEDD awarded two consultancies for the Project (one for the planning and engineering feasibility study and another one for the site investigation, design and construction supervision work) to two consultants (Consultants X and Y respectively). In January 2008 and January 2013, CEDD awarded two works contracts (Contracts A and B) to two contractors (Contractors A and B respectively) for the implementation of the Project. In the event, the Project was substantially completed in December 2016 and the residential sites formed under the Project were used for public housing development. As of October 2021, the Government had incurred \$3,522.1 million (99% of \$3,543.4 million) for the Project.

3. A footbridge system comprising Footbridges A to D was constructed for connecting the planned development (including the public housing development) at the site under the Project with the neighbouring communities of Sau Mau Ping and Shun On. After completion of works, CEDD handed over Footbridges A to D to the relevant government departments (including the Highways Department (HyD) and the Electrical and Mechanical Services Department (EMSD)) between 2016 and 2018 for

Executive Summary

maintenance. The Audit Commission (Audit) has recently conducted a review to examine the implementation of the Project by CEDD and the management of Footbridges A to D.

Design of footbridge system under the Project

4. Contract A mainly involved the formation of about 20 hectares of land platforms and associated geotechnical and slope stabilisation works, and the construction of Footbridges A to C. In January 2008, CEDD awarded Contract A to Contractor A at a contract sum of \$2,063 million. The contract works (excluding landscape softworks and establishment works) were substantially completed in December 2016. As of October 2021, the contract expenditure was \$2,844.3 million. Contract B mainly involved the construction of Footbridge D. In January 2013, CEDD awarded Contract B to Contractor B at a contract sum of \$151.8 million. The contract works were completed in April 2018 and the final contract sum was \$167.9 million. Consultant Y was the Engineer responsible for supervising the works under Contracts A and B (paras. 2.3 to 2.6).

5. *Significant design changes of the footbridge system after award of Contract A.* Audit noted that:

- (a) under the original design, the footbridge system under the Project comprised 3 footbridges (i.e. Footbridges A to C constructed under Contract A). Before tendering of Contract A (between August 2006 and August 2007), CEDD received views from various stakeholders on the design of the footbridge system under the Project, including the addition of a footbridge and the need for the footbridges to be subject to further review after completion of a traffic review study by the Housing Department (HD) (paras. 2.8 and 2.22(a));
- (b) according to CEDD, to meet the then planned population intake programme of the proposed public housing development in 2015, Contract A (involving more time-consuming construction activities on site formation works) was tendered out in September 2007 and awarded in January 2008 (paras. 2.10 and 2.22(a));
- (c) in March 2009, HD's traffic review study was completed and proposed significant design changes of the footbridge system, including the

Executive Summary

significant modifications of the design of Footbridges A to C and the addition of a new Footbridge D. The significant design changes were accepted by the Transport and Housing Bureau (para. 2.22(b));

- (d) in implementing the works arising from the significant design changes of the footbridge system: (i) Consultant Y instructed Contractor A to proceed with the construction of Footbridges A to C in March 2012 and issued 141 variation orders (VOs) (later valued at a total cost of \$186 million) on the revised details of Footbridges A to C and associated works. Upon receipt of the VOs, Contractor A submitted claims for an extension of time and prolongation cost. CEDD entered into a supplemental agreement with Contractor A in February 2014, under which the Government paid \$70.1 million to accelerate the completion of Footbridges B and C, and settle all claims for events related to the construction of Footbridges A to C that occurred before the execution of the supplemental agreement; and (ii) a new Contract B was awarded in January 2013 for the construction of the new Footbridge D and the final contract sum was \$167.9 million (paras. 2.16, 2.17, 2.19 and 2.22(c));
- (e) in granting its approval for CEDD to enter into the supplemental agreement with Contractor A (see (d)(i) above), the Financial Services and the Treasury Bureau said that: (i) it noted that in face of the target completion date of the Project by 2015, CEDD practically had no choice but to tender Contract A in 2007 although the design of the new footbridge system had yet to be finalised; and (ii) that said, CEDD was reminded that it should in future improve the local consultation process and better assess the requirements of local residents and District Councils for infrastructure works to avoid recurrence of similar situations (para. 2.22(d)); and
- (f) there is scope for CEDD to draw lessons from the significant design changes of the footbridge system under the Project. CEDD needs to make every endeavour to consult stakeholders with a view to finalising the design of works before tendering of contracts in future (paras. 2.21 and 2.22(e)).

6. ***Scope for improvement in contract arrangement.*** According to CEDD, as there was a chance of deleting works for Footbridges A to C and a high chance of introducing substantial modifications to the design of them, the construction of these footbridges was included under a section subject to excision (i.e. the excision contract clause) in the tender documents of Contract A. The objective was to allow CEDD to

Executive Summary

reserve the right to instruct Contractor A to commence the construction of Footbridges A to C after completion of the traffic review study by HD. Audit noted that while this contract clause allowed CEDD to decide whether and when to commence the construction of Footbridges A to C, it could not preclude claims (e.g. for extension of time and prolongation cost) from Contractor A arising from the significant design changes of Footbridges A to C after contract award under the contract provisions (see para. 5(d)(i)). In this connection, in October 2006, HD suggested CEDD to implement the site formation and the remaining infrastructure works (including footbridges) in phases through several works contracts. In the event, a single contract (Contract A) was awarded for the construction of Footbridges A to C. There was no documentation on the justifications for adopting this single contract arrangement (paras. 2.9(f) and 2.23(b) to (d)).

Contract management

7. *Scope for enhancing the management of slope works.* According to CEDD, in connection with the construction works under Contract A, there were: (a) 1 concrete block falling incident (occurred in May 2009). According to Consultant Y, the causes of this incident included no protective measures taken at the slope edge or at the lower sloping area to prevent any material from rolling down the slope, and low awareness of frontline supervisors and workers in taking proactive measures to guard against falling objects from height. After the incident, a barrier was provided at the sloping area immediately below the working area and training had been provided to frontline supervisors and workers to strengthen their awareness; and (b) 3 landslide incidents (2 occurred in May 2013 and 1 occurred in May 2015) and 2 other events relating to damage of retaining walls under construction (occurred in July and September 2012 respectively). These incidents and other events were resulted from the inadequate capacity of the temporary drainage system during the construction stage. In January 2014, CEDD promulgated guidelines on temporary drainage provisions and precautionary measures against severe rainfall during site formation works and construction of reinforced fill structures, with particular reference to the observations and lessons learnt from the 2 landslide incidents in May 2013. In Audit's view, there is scope for enhancing the management of slope works (paras. 3.2 to 3.4).

8. *Need to ensure the timely completion of defects rectification works.* Under Contract A, Contractor A was required to carry out defects rectification works at its own cost within the 12-month maintenance period. Contract A was substantially

Executive Summary

completed in December 2016 and the maintenance period expired in December 2017. However, Audit noted that: (a) according to Consultant Y, a significant amount of defects rectification works had yet to be completed after the expiry of the maintenance period; and (b) according to CEDD, the defects rectification works (excluding the defects rectification works for landscape softworks and establishment works — see para. 9) were completed in July 2020 (i.e. about 2.6 years after the expiry of the maintenance period in December 2017) (paras. 3.10 and 3.11).

9. ***Long time taken to complete all the landscape softworks and establishment works.*** After the substantial completion of Contract A in December 2016, Contractor A was required to carry out the remaining landscape softworks and establishment works. After completion of establishment works, the established vegetation would be inspected by the maintenance departments and then handed over to them for maintenance. Audit noted that the landscape softworks and establishment works under Contract A were completed in phases between January 2020 and September 2021 (i.e. 3 years to nearly 5 years after the substantial completion of Contract A in December 2016). According to CEDD, the defects rectification works for landscape softworks and establishment works and the inspection and handover procedures with the maintenance department on the established vegetation would be completed in the second quarter of 2022, and the account of Contract A would be finalised in the third quarter of 2022. In Audit's view, CEDD needs to ensure that all such works are completed as scheduled, and finalise the account of Contract A as soon as possible (paras. 3.16 to 3.19).

10. ***Scope for improvement in documentation of assessment of contractor's claims.*** According to Consultant Y's assessment of March 2019 on Contractor B's claim for prolongation cost for carrying out the landscape softworks and establishment works for Footbridge A under a section of works of Contract B (Section A), Contractor B was entitled to prolongation cost of \$4.8 million associated with the delay to Section A. When vetting Consultant Y's assessment of Contractor B's claim in March 2019, CEDD reminded Consultant Y that the prolongation cost entitlement under the claim should be solely related to Section A. Should there be expenses related to other sections of works, adjustment on the cost entitlement should be made. In April 2019, Consultant Y said that it noted CEDD's view. In response to Audit's enquiries, in February and April 2022, CEDD said that: (a) the prolongation cost of \$4.8 million granted to Contractor B was not solely for the landscape softworks and establishment works for Footbridge A under Section A; and (b) in the course of the claim assessment, Consultant Y had taken into account additional expenditures arising from a number of VOs under another section of works of Contract B together with

Executive Summary

the works under Section A. In Audit's view, in implementing works projects in future, CEDD needs to remind its consultants to properly document their assessments of contractors' claims (paras. 3.20 to 3.22).

Management of Footbridges A to D and post-completion review

11. ***Scope for enhancing lift services at Footbridges A to D.*** Regarding the management of Footbridges A to D, HyD is responsible for the maintenance of structures and associated components of the footbridges, and EMSD is the maintenance agent of HyD for the electrical and mechanical works of lifts and lighting works. There are a total of 17 lifts installed at Footbridges A to D under EMSD's maintenance. During the 3-year period from January 2019 to December 2021, Audit noted that: (a) there were a total of 183 cases involving suspension of lift services at Footbridges A to D. The duration of suspension of lift services ranged from 6 minutes to 242 hours (or 10 days), averaging 10 hours. Of the 183 cases: (i) 143 (78%) involved equipment failure and required repair work to resume lift services. Of these 143 cases, 86 (60%) involved major repairs of electrical and mechanical parts; and (ii) 40 (22%) did not involve equipment failure and did not require such repair work; (b) for the lifts at Footbridge A, the average number of cases involving suspension of lift services (i.e. 6 cases per lift per year) was the highest among the lifts at the 4 footbridges; and (c) according to EMSD, enhancement measures had been implemented and would continue to be carried out. In Audit's view, HyD needs to, in collaboration with EMSD, continue to closely monitor the proper functioning of the lifts at Footbridges A to D and take enhancement measures as necessary (paras. 4.2 to 4.6).

12. ***Need to keep under review the usage of Footbridges A to D.*** The Transport Department has the overall responsibility for the planning and provision of pedestrian crossing facilities, including footbridges and subways. Regarding the usage of Footbridges A to D, Audit noted that: (a) according to the traffic surveys conducted at Footbridge A in September 2018 and December 2021, and Footbridge B in June 2020, the pedestrian flows thereat were smooth except that there was room for improvement in the lift services to reduce the lift waiting time; and (b) there would be another housing development at the Anderson Road Quarry site nearby the public housing development at the land platforms formed under the Project. It was planned to connect the housing development at the Anderson Road Quarry site with the neighbouring communities via Footbridges A to D. Upon full population intake in

Executive Summary

around 2026, the Anderson Road Quarry site would accommodate a total population of about 30,000. The additional population would put further pressure on the pedestrian flows and usage of Footbridges A to D, including the lift services at these footbridges. Audit considers that there is a need to keep under review the usage of Footbridges A to D (including the adequacy of pedestrian capacity) and keep monitoring the performance of the lifts at these footbridges to maintain reliable and efficient services (paras. 4.10 and 4.11).

13. ***Need to timely conduct post-completion review.*** According to the Project Administration Handbook for Civil Engineering Works issued by CEDD: (a) a post-completion review is a useful project management tool and should be carried out within a reasonable period, say six months, after the substantial completion of a consultancy agreement or a works contract; and (b) post-completion reviews are generally not warranted for consultancy agreements and works contracts of a project which has a total cost less than \$500 million or of a project which does not involve complicated technical and management issues. Audit noted that the Project involved a significant project expenditure of \$3,522.1 million as of October 2021. While Contracts A and B were substantially completed in December 2016, the post-completion review was not completed until May 2022 (i.e. about 5.4 years thereafter) (paras. 4.18 and 4.19).

Audit recommendations

14. **Audit recommendations are made in the respective sections of this Audit Report. Only the key ones are highlighted in this Executive Summary. Audit has recommended that the Director of Civil Engineering and Development should:**

Design of footbridge system under the Project

- (a) **in implementing site formation and infrastructure works projects in future:**
 - (i) **finalise the design of works before tendering of contracts with a view to avoiding significant design changes after award of contracts and claims from contractors arising therefrom (para. 2.26(a));**

Executive Summary

- (ii) where the details of some works could not be finalised under a time-critical project, critically consider the measures for addressing the matter with a view to mitigating the risks arising from significant design changes after contract award (para. 2.26(b)); and
- (iii) document the justifications for the adoption of contract arrangement (para. 2.26(c));

Contract management

- (b) in implementing works projects in future:
 - (i) remind CEDD contractors to take adequate protective measures for working on slopes and provide appropriate training to enhance safety awareness of their staff (para. 3.14(a));
 - (ii) remind CEDD staff and consultants to:
 - follow the guidelines on temporary drainage provisions and precautionary measures against severe rainfall during site formation works and construction of reinforced fill structures (para. 3.14(b)(i)); and
 - closely monitor the defects rectification works of contractors and take necessary measures to ensure the timely completion of such works (para. 3.14(b)(iii)); and
 - (iii) remind CEDD consultants to properly document their assessments of contractors' claims (para. 3.23(c));
- (c) ensure that all the landscape softworks and establishment works under Contract A are completed as scheduled, and finalise the account of Contract A as soon as possible (para. 3.23(a) and (b)); and

Executive Summary

Management of Footbridges A to D and post-completion review

- (d) **remind CEDD staff and consultants to conduct post-completion reviews on major works contracts in a timely manner (para. 4.20).**

15. **Audit has recommended that:**

Management of Footbridges A to D and post-completion review

- (a) **the Director of Highways should, in collaboration with the Director of Electrical and Mechanical Services, continue to closely monitor the proper functioning of the lifts at Footbridges A to D and keep monitoring their performance to maintain reliable and efficient services (paras. 4.12 and 4.14(b)); and**
- (b) **the Commissioner for Transport should, in collaboration with the relevant government departments, keep under review the usage of Footbridges A to D (para. 4.14(a)).**

Response from the Government

16. The Director of Civil Engineering and Development, the Director of Highways, the Director of Electrical and Mechanical Services and the Commissioner for Transport agree with the audit recommendations.

PART 1: INTRODUCTION

1.1 This PART describes the background to the audit and outlines the audit objectives and scope.

Background

1.2 In 1996, the Government identified a potential site with an area of about 58 hectares (ha) between Anderson Road and Sau Mau Ping Road in East Kowloon for boosting land supply for housing. Upon completion of the “Planning and Engineering Feasibility Study for Development at Anderson Road” in October 1998 and a review on the findings of the planning and engineering feasibility study in January 2007, the feasibility of the planned development (including housing development, government, institution or community facilities, and district open spaces) at the site was confirmed. The development at Anderson Road project (hereinafter referred to as the Project) covered the site formation and associated infrastructure works at the site (see para. 1.3). The Transport and Housing Bureau (THB — Note 1) was the policy bureau for the Project and the Civil Engineering and Development Department (CEDD — Note 2) was the works agent responsible for carrying out the works under the Project.

Note 1: *In July 2007, THB was formed to take over the policy responsibility for housing matters. Before July 2007, the policy responsibility rested with the then Housing, Planning and Lands Bureau (July 2002 to June 2007), the then Housing Bureau (July 1997 to June 2002) and the then Housing Branch (before July 1997). For simplicity, all previous policy bureaux and branch responsible for the policies on housing matters are also referred to as THB in this Audit Report.*

Note 2: *In July 2004, CEDD was formed by merging the then Civil Engineering Department and the then Territory Development Department. For simplicity, the then Civil Engineering Department is also referred to as CEDD in this Audit Report.*

Introduction

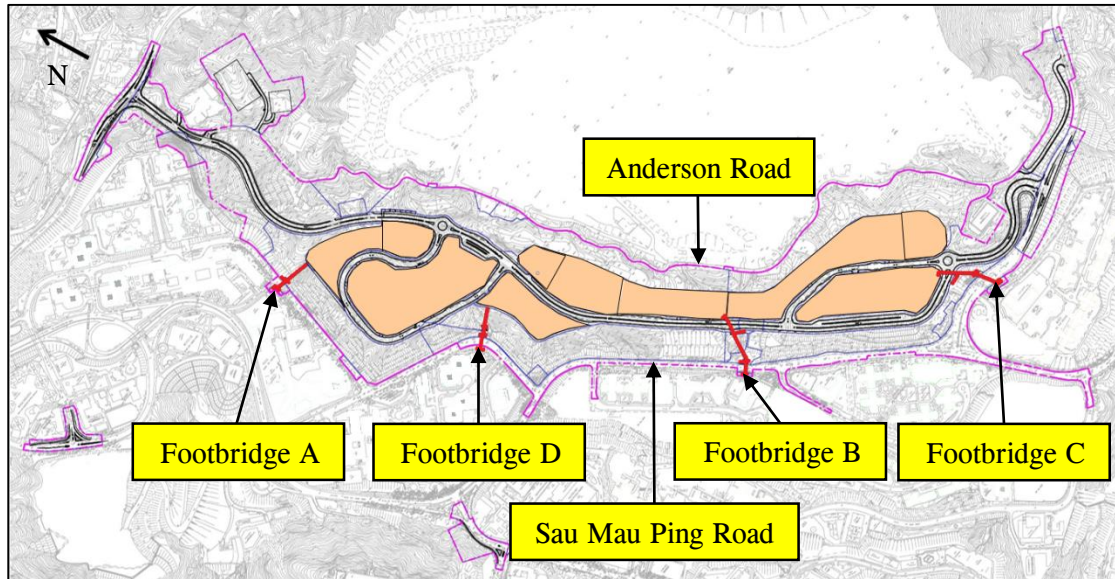
Implementation of the Project

1.3 The Project commenced in January 2008 and was substantially completed in December 2016. The scope of works included the following:

- (a) formation of about 20 ha of land platforms and construction of associated slopes and retaining walls;
- (b) road works of about 4,700 metres (m) in length, including associated footways and road junction improvement works;
- (c) road bridges, footbridges and pedestrian subway. According to the funding paper submitted by THB to the Public Works Subcommittee (PWSC) of the Finance Committee (FC) of the Legislative Council (LegCo) (approved by FC in December 2007 — see Table 1 in para. 1.4), 3 footbridges (Footbridges A to C) would be constructed. In the event, one more footbridge (Footbridge D) was added during construction stage and a total of 4 footbridges were constructed;
- (d) drainage, sewerage and landscaping works; and
- (e) environmental mitigation measures for the abovementioned works.

Figure 1 shows the site plan for the Project.

Figure 1
Site plan for the Project



- Legend:
- · — Proposed site boundary
 - ▭ Proposed land platforms for housing development, government, institution or community facilities, and district open spaces
 - ▬ Proposed footbridges

Source: CEDD records

Introduction

1.4 The Project was implemented under three project votes (hereinafter referred to as Project Votes A to C). A total funding of \$3,543.4 million was approved by FC between June 1997 and December 2007 for the Project (see Table 1).

Table 1
Funding approvals for the Project
(June 1997 to December 2007)

Date	Particulars	Approved amount (\$ million)
<i>Planning, investigation and detailed design</i>		
Project Vote A		
June 1997	Planning and engineering feasibility study	18.7
Project Vote B		
July 1999	Site investigation and detailed design	57.5
<i>Construction works</i>		
Project Vote C		
December 2007	Site formation and associated infrastructure works	3,467.2
Total		3,543.4

Source: CEDD records

1.5 In August 1997 and May 2006, CEDD awarded two consultancies for the Project (see Table 2) respectively, as follows:

- (a) Consultancy X for the planning and engineering feasibility study; and
- (b) Consultancy Y for the site investigation, design and construction supervision work of the Project which involved two works contracts (Contracts A and B — see para. 1.6).

Table 2
Consultancies for the Project
(October 2021)

Consultancy	Consultant	Particulars	Consultancy fee (\$ million)
X (Awarded in August 1997)	X	Planning and engineering feasibility study	11.3
Y (Awarded in May 2006)	Y	Site investigation, design and construction supervision work for Contracts A and B	26.0
Total			37.3

Source: CEDD records

1.6 In January 2008 and January 2013, CEDD awarded two works contracts (Contracts A and B) to two contractors (Contractors A and B respectively) for the implementation of the Project. Contracts A and B were both substantially completed (excluding landscape softworks and establishment works (Note 3)) in December 2016, which were about 28.6 and 13 months later than their original completion dates respectively (see Table 3). Contract expenditures as of October 2021 are shown at Appendix A.

Note 3: *According to CEDD, establishment works include regular inspections, cultivations and other operations as specified to be performed during the period of establishment following completion of the landscape softworks (e.g. planting of vegetation).*

Table 3

**Contracts awarded for the Project
(January 2008 to December 2016)**

Contract	Works	Commencement date	Original completion date (Note)	Actual completion date (Note)	No. of months later than original completion date
A	Site formation and associated infrastructure works	31.1.2008	16.7.2014	2.12.2016	28.6
B	Footbridge D and associated works	31.1.2013	30.11.2015	30.12.2016	13.0

Source: CEDD records

Note: The original completion date and actual completion date referred to dates of completion of all works excluding landscape softworks and establishment works. The landscape softworks and establishment works under Contract B were completed in April 2018, which was about 16.9 months later than the original completion date of November 2016 for such works. As of October 2021, the landscape softworks and establishment works under Contract A were still in progress.

1.7 The residential sites formed under the Project were used for public housing development, which comprised two public rental housing estates, namely On Tat Estate and On Tai Estate. According to the funding paper submitted by THB to PWSC, the proposed public housing development would provide public housing for a population of about 48,000 in phases between 2015 and 2016. According to CEDD, the residential sites were handed over to the Housing Department (HD — Note 4) between October 2011 and November 2013. In the event, according to HD, the population intake dates for On Tat Estate commenced in phases between June and December 2016, and those for On Tai Estate commenced in phases between June 2017 and July 2018 (Note 5).

Project cost

1.8 As of October 2021, \$3,522.1 million (99%) of the approved project estimate totalling \$3,543.4 million (see para. 1.4) for the Project had been incurred. Of the \$3,522.1 million:

- (a) \$2,913.4 million (83%) was related to expenditures for the Project under Contracts A and B (see Note 4 to Appendix A); and
- (b) the remaining \$608.7 million (17%) comprised resident site staff costs of \$311.9 million, consultancy fees of \$37.3 million (see Table 2 in para. 1.5) and other costs of \$259.5 million (Note 6).

Note 4: *HD is the executive arm of the Hong Kong Housing Authority, which is a statutory body established under the Housing Ordinance (Cap. 283) to develop and implement a public housing programme to help the Government achieve its policy objective on public housing.*

Note 5: *According to CEDD: (a) as mentioned in the funding paper submitted by THB to PWSC, HD planned to start construction of the public housing flats in end 2011 to meet the housing development programme; and (b) major land platforms were formed by CEDD and handed over to HD in phases between 2011 and 2013. According to HD, the construction works for the public housing development commenced in phases upon taking over the major land platforms from CEDD between 2011 and 2013, and were completed in phases between 2016 and 2018.*

Note 6: *According to CEDD, other costs comprised cost of disposal of excavated materials of \$182.7 million and miscellaneous costs (e.g. expenditures on site investigation works and minor works paid to term contractors) of \$76.8 million.*

Introduction

Construction and management of Footbridges A to D

1.9 A footbridge system comprising Footbridges A to D was constructed for connecting the planned development (including the public housing development (i.e. On Tat Estate and On Tai Estate)) at the site under the Project (see Figure 1 in para. 1.3) with the neighbouring communities of Sau Mau Ping and Shun On. After the award of Contract A in January 2008, there were significant design changes of the footbridge system under the Project, as follows:

- (a) the design changes of Footbridges A to C (constructed under Contract A) led to variations of works under Contract A (valued at a total cost of \$186 million), payment of acceleration cost (\$23.1 million) and claims from Contractor A (settled at \$47 million); and
- (b) a new Footbridge D was added and constructed under a new Contract B (with a final contract sum of \$167.9 million).

1.10 After completion of works, CEDD handed over Footbridges A to D to the relevant government departments (Note 7) between 2016 and 2018 for maintenance, including:

- (a) ***Highways Department (HyD)***. It is responsible for the maintenance of structures and associated components of the footbridges (e.g. footbridge decks, staircases, lift towers and drainage); and
- (b) ***Electrical and Mechanical Services Department (EMSD) (through the Electrical and Mechanical Services Trading Fund — Note 8)***. It is the maintenance agent of HyD for the electrical and mechanical works of lifts (e.g. lift car, lift mechanics and power supply) and lighting works.

Note 7: *Apart from the two government departments mentioned in paragraph 1.10(a) and (b), the following two government departments are also responsible for maintenance of the footbridges: (a) the Food and Environmental Hygiene Department, which is responsible for the cleansing and hygiene of the footbridges; and (b) the Leisure and Cultural Services Department, which is responsible for the maintenance of vegetation at the footbridges.*

Note 8: *The Electrical and Mechanical Services Trading Fund (the trading arm of EMSD) provides electrical and mechanical services to customers (including government bureaux/departments).*

Audit review

1.11 In November 2021, the Audit Commission (Audit) commenced a review of the implementation of the Project by CEDD and the management of Footbridges A to D. The audit review has focused on the following areas:

- (a) design of footbridge system under the Project (PART 2);
- (b) contract management (PART 3); and
- (c) management of Footbridges A to D and post-completion review (PART 4).

Audit has found room for improvement in the above areas and has made a number of recommendations to address the issues.

Acknowledgement

1.12 During the audit review, in light of the outbreak of the fifth wave of the coronavirus disease (COVID-19) epidemic, the Government had implemented various special work arrangements and targeted measures for government employees, including working from home. Audit would like to acknowledge with gratitude the full cooperation of the staff of CEDD, HD, HyD and EMSD during the course of the audit review amid the COVID-19 epidemic.

PART 2: DESIGN OF FOOTBRIDGE SYSTEM UNDER THE PROJECT

2.1 This PART examines CEDD's work in administering the design of the footbridge system under the Project (paras. 2.8 to 2.27).

Background

2.2 In January 2008 and January 2013, CEDD awarded two works contracts (i.e. Contracts A and B — see Table 3 in para. 1.6) for the implementation of the Project.

2.3 ***Contract A.*** Contract A was a remeasurement contract (Note 9) covering the site formation and associated infrastructure works for the development site between Anderson Road and Sau Mau Ping Road in East Kowloon. The contract works mainly included:

- (a) formation of about 20 ha of land platforms and associated geotechnical and slope stabilisation works, and earth retaining structures;
- (b) disposal of surplus excavated materials;
- (c) construction of access roads and associated infrastructure works;
- (d) stormwater drainage system and sewerage system;

Note 9: *Under a remeasurement contract, the costs of works are based on the actual quantities of works done to be remeasured and the prices of different works items as priced by the contractor in the Bills of Quantities according to the contract. According to the Project Administration Handbook for Civil Engineering Works issued by CEDD, Bills of Quantities is a list of items giving brief identifying descriptions and estimated quantities of the works to be performed. Bills of Quantities forms a part of the contract documents, and is the basis of payment to the contractor. The main functions of Bills of Quantities are to allow a comparison of tender prices and provide a means of valuing the works.*

Design of footbridge system under the Project

- (e) vehicular bridges, footbridges (i.e. Footbridges A to C), subway and noise barrier; and
- (f) landscaping measures (both softworks and hardworks) associated with the establishment of the land platforms and surrounding slope works and the road side amenities.

2.4 In January 2008, CEDD awarded Contract A to Contractor A at a contract sum of \$2,063 million. The works commenced in the same month with a contract period of about 78 months. Consultant Y was the Engineer responsible for supervising the contract works. The contract works (excluding landscape softworks and establishment works) were substantially completed in December 2016, about 28.6 months (870 days) later than the original completion date of July 2014 with extensions of time (EOTs — Note 10) for the whole period granted to Contractor A (Note 11). As of October 2021, the account of Contract A had not been finalised and

Note 10: *According to the General Conditions of Contract for Civil Engineering Works, regarding contract works commencement, completion and delays: (a) the works and any section thereof shall be completed within the time or times stated in the contract calculated from and including the date for commencement notified by the Engineer or such extended time as may be determined; (b) if the contractor fails to complete the works or any section of works within the time for completion or such extended time as may be granted, then the Employer shall be entitled to recover from the contractor liquidated damages for delay; and (c) if in the opinion of the Engineer, the cause of any delay to the progress of the works or any section of works is any of those stipulated in the General Conditions of Contract (e.g. inclement weather, a variation order issued by the Engineer, the contractor not being given possession of site, etc.), then the Engineer shall within a reasonable time consider whether the contractor is entitled to an EOT for completion of the works or any section thereof. According to the Project Administration Handbook for Civil Engineering Works issued by CEDD, an EOT for completion in effect deprives the Government of the right to liquidated damages for delay in completion of the works for the period of the extension and therefore has a financial implication.*

Note 11: *According to CEDD: (a) Contract A comprised a total of 20 sections of works and EOTs had been granted to Contractor A for different sections of works throughout the construction period. As the time periods of EOTs for some sections of works overlapped, the summation of EOTs for all sections of works did not necessarily equal to the period of 870 days; and (b) collectively speaking, the completion of Contract A later than the original completion date was largely attributed to major factors of inclement weather and variation orders (some of which involved increase in quantity of rock excavation).*

Design of footbridge system under the Project

the up-to-date contract expenditure was \$2,844.3 million (an increase of \$781.3 million (37.9%) over the original contract sum of \$2,063 million — Note 12).

2.5 Contract B. Contract B was a remeasurement contract covering Footbridge D and associated works. The contract works mainly included:

- (a) construction of Footbridge D, lift towers, drainage system and a footpath;
- (b) site formation and associated slope works for Footbridge D; and
- (c) landscape softworks and hardworks, and associated establishment works for Footbridge D.

2.6 In January 2013, CEDD awarded Contract B to Contractor B at a contract sum of \$151.8 million. The works commenced in the same month with a contract period of about 34 months. Consultant Y was the Engineer responsible for supervising the contract works. The contract works (excluding landscape softworks and establishment works) were substantially completed in December 2016. In the event, all works under Contract B (including landscape softworks and establishment works) were completed in April 2018, about 16.9 months (514 days) later than the original completion date of November 2016 with EOTs for the whole period granted to Contractor B (Note 13). The account of Contract B was finalised in May 2020 and the final contract sum was \$167.9 million (an increase of \$16.1 million (10.6%) over the original contract sum of \$151.8 million — Note 14).

Note 12: *According to CEDD, for the \$781.3 million increase over the original contract sum, \$306.6 million was due to price fluctuation adjustment and the remaining was due to other reasons, including remeasurement of quantities and works variations.*

Note 13: *EOTs granted to Contractor B were due to unavailability of site for carrying out landscape softworks and establishment works.*

Note 14: *According to CEDD, for the \$16.1 million increase over the original contract sum, \$2.1 million was due to price fluctuation adjustment and the remaining was due to other reasons, including remeasurement of quantities and works variations.*

Footbridge system under the Project

2.7 The footbridge system comprising Footbridges A to D was constructed for connecting the planned development (including the public housing development (i.e. On Tat Estate and On Tai Estate)) at the site under the Project with the neighbouring communities of Sau Mau Ping and Shun On, as follows:

- (a) ***On Tai Estate.*** There are two footbridges connecting to On Tai Estate:
 - (i) Footbridge A connecting On Tai Estate and Lee On Road (see Photographs 1 and 2); and
 - (ii) Footbridge D connecting On Tai Estate and Shun On Road (see Photographs 1 and 3); and

- (b) ***On Tat Estate.*** There are two footbridges connecting to On Tat Estate:
 - (i) Footbridge B connecting On Tat Estate and Sau Mau Ping Road (see Photographs 4 and 5); and
 - (ii) Footbridge C connecting On Tat Estate and Po Lam Road (see Photographs 4 and 6).

Design of footbridge system under the Project

Photograph 1

Footbridges A and D
(July 2016)



Source: CEDD records

Design of footbridge system under the Project

Photograph 2

Footbridge A (May 2017)



Source: *CEDD records*

Photograph 3

Footbridge D (June 2017)



Source: *CEDD records*

Design of footbridge system under the Project

Photograph 4

Footbridges B and C
(April 2016)



Source: CEDD records

Photograph 5

**Footbridge B
(June 2016)**



Source: CEDD records

Photograph 6

**Footbridge C
(June 2016)**



Source: CEDD records

Administration of design of footbridge system under the Project

2.8 Under the original design which, according to CEDD, had taken into consideration the private and public housing development parameters and block layout design agreed at that time, the footbridge system under the Project comprised 3 footbridges (i.e. Footbridges A to C constructed under Contract A). Following consultations with the Kwun Tong District Council (KTDC) and the Sai Kung District Council, the construction of the 3 footbridges under the original design together with other proposed road works were gazetted under the Roads (Works, Use and Compensation) Ordinance (Cap. 370) in September 2000. According to CEDD, the necessary statutory procedures under the Ordinance were completed in March 2002 and the locations of the proposed 3 footbridges were determined having regard to views collected through the consultation conducted in 2002 in accordance with the Ordinance. In 2003, the housing development programme was changed and the Project was put on hold. In October 2005, the implementation work for the Project resumed and there was a change in the development parameters entirely for public housing. In May 2006, Consultancy Y was awarded for the site investigation, design and construction supervision work of the Project (see para. 1.5(b)).

2.9 *Consultations with parties concerned before tendering of Contract A.*

Before tendering of Contract A in September 2007, CEDD received views from various stakeholders (including HD (Note 15), KTDC and the Advisory Committee on the Appearance of Bridges and Associated Structures (ACABAS — Note 16)) on the design of the footbridge system under the Project on various occasions (see Appendix B for details). The salient points are as follows:

- (a) in August 2006, HD advised that there would be amendments to the footbridges of the Project, including the addition of a footbridge and re-alignment of Footbridge B;
- (b) in October 2006, HD suggested CEDD to implement the site formation and the remaining infrastructure works (including walkways and footbridges) in phases through several works contracts to meet the population intake of the public housing development. This arrangement had been found satisfactory in another site formation project (Note 17) undertaken by CEDD;

Note 15: *According to HD, during the planning stage of On Tat Estate and On Tai Estate public housing development projects, it was involved in providing advice and comments to CEDD on the Project to better suit the housing development projects to be implemented by HD.*

Note 16: *According to Environment, Transport and Works Bureau Technical Circular (Works) No. 36/2004 on “The Advisory Committee on the Appearance of Bridges and Associated Structures (ACABAS)”:* (a) ACABAS was set up in 1984 to advise on the visual merit, general amenity value and related environmental considerations of all proposals to construct bridges and associated structures over, under, on or adjacent to public roads; (b) it is chaired by a Regional Highway Engineer from HyD and comprises representatives from government departments and professional bodies; (c) the primary activity of ACABAS is the vetting of the design of bridges and other structures associated with the public highway system from the aesthetic, visual and greening points of view; and (d) all works departments which need to provide bridges and other structures associated with the public highway system have to obtain the acceptance of the Director of Highways by submitting their design proposals to ACABAS before implementation.

Note 17: *The site formation project referred to the site formation and associated infrastructure works for the development near Choi Wan Road and Jordan Valley which commenced in November 2001 and was completed in October 2010. There were 3 works contracts under this project, including 1 for site formation and associated infrastructure works (awarded in November 2001) and 2 for Stages 1 and 2 of the remaining infrastructure works respectively (awarded in December 2005 and January 2007 respectively). The construction of footbridges (3 in total) under this project was implemented under the 2 works contracts for the remaining infrastructure works.*

Design of footbridge system under the Project

- (c) at a meeting of KTDC in March 2007, a District Council Member raised concerns that the proposed provision of only 3 footbridges might be inadequate to cope with the pedestrian flows arising from the proposed public housing development at the land platforms formed under the Project;
- (d) in May 2007, HD commented that further review of the locations and number of footbridges was required;
- (e) in August 2007, ACABAS commented that the need for the footbridges, in particular Footbridges A and B, was in doubt. Noting that HD would conduct a traffic review study (see para. 2.12) to review the access and landing locations of the footbridges, ACABAS requested Consultant Y to review the need for the footbridges after completion of HD's study; and
- (f) after ACABAS's acceptance of the design proposal of Footbridges A to C, CEDD informed Consultant Y in August 2007 that:
 - (i) Footbridges A to C would only be constructed should their need be justified and confirmed under HD's traffic review study; and
 - (ii) as there was a chance of deleting works for these footbridges and a high chance of introducing substantial modifications to the design of them, relevant contract clauses should be incorporated into Contract A that construction of these footbridges should only be commenced upon receipt of Consultant Y's instruction.

2.10 ***Excision contract clause.*** According to CEDD, before inviting tenders for Contract A, HD indicated that it would conduct a traffic review study in April 2008 to review, among others, the pedestrian facilities connecting the development site under the Project and the existing housing estates in the adjoining areas (see para. 2.12). To allow CEDD to reserve the right to instruct Contractor A to commence the construction of Footbridges A to C after completion of the traffic review study by HD, the construction of Footbridges A to C was included under a section subject to excision (i.e. the excision contract clause) in the tender documents of Contract A, as follows:

- (a) according to Contract A, a section subject to excision means a section of works the details of which are known, but the implementation of which has

Design of footbridge system under the Project

not been decided upon by the Employer at the time the tender documents are issued. The works shall only be implemented upon a subsequent decision of the Employer, followed by a written instruction from the Engineer; and

- (b) according to the excision contract clause, Contractor A is obliged to complete the 3 footbridges in 730 days upon receipt of the instruction from Consultant Y by 17 December 2012. According to CEDD, the latest date of instruction was so devised to make sure that the footbridges could be completed to match with the population intake of the proposed public housing development at that time if HD, upon the traffic review study, decided to construct the footbridges under the original design.

According to CEDD, to meet the then planned population intake programme of the proposed public housing development in 2015 envisaged by HD, Contract A (involving more time-consuming construction activities on site formation works) was tendered out in September 2007 (Note 18) (see also para. 2.24 for the adoption of this contract arrangement and the excision contract clause).

2.11 *LegCo Members' concerns on the footbridge system.* At a meeting of PWSC in November 2007 considering funding for the construction works under the Project, LegCo Members:

- (a) recapitulated KTDC Members' concerns (see para. 2.9(c));
- (b) suggested that more footbridges should be provided for the proposed public housing development and the locations of the footbridges should be determined having regard to the need for providing convenient pedestrian access link between the proposed public housing development and the neighbouring facilities; and
- (c) opined that the proposed locations of the 3 footbridges should be subject to further consideration in consultation with KTDC.

Note 18: *Funding for the construction works under the Project was approved by FC in December 2007 (see Table 1 in para. 1.4). Approval to invite tenders before securing funding was given by THB in September 2007.*

Design of footbridge system under the Project

In response, the Government agreed to reconsider the number of footbridges and their locations taking into account the findings of a traffic review study to be undertaken by HD (see para. 2.12) when the layout and design of the proposed public housing development was ready in 2008-09. In the event, after approval of funding by FC in December 2007 (see Table 1 in para. 1.4), Contract A was awarded and commenced in January 2008.

2.12 ***HD's traffic review study.*** In April 2008, HD commissioned a consultant to conduct a traffic review study for the public housing development at Anderson Road (Note 19). The study was to review, among others (Note 20), the pedestrian facilities within the development site and the provision of external pedestrian linkages between the development site and adjoining areas to suit the need of the future residents at the proposed public housing development.

Significant design changes of the footbridge system

2.13 In March 2009 (about one year after the commencement of Contract A in January 2008):

- (a) HD completed the traffic review study after local public consultations and community engagements for the proposed public housing development. The study recommended that a new footbridge (i.e. Footbridge D) should be added to the footbridge system to enhance pedestrian connectivity. The study also identified substantial enhancements (e.g. additional lift towers and staircases, additional/lengthened footbridge decks and change of orientation/location of footbridges) to Footbridges A to C to improve the attractiveness and level of comfort of the footbridge system;
- (b) KTDC gave support on the proposed provision of footbridges under the traffic review study; and

Note 19: *According to HD, before the conduct of the traffic review study, the Traffic Impact Assessment conducted by Consultant Y (commissioned by CEDD in 2006 and finalised in 2007) was being used as reference during the early design study.*

Note 20: *The traffic review study also reviewed the provision of public transport facilities and the internal road network arrangement to meet the anticipated traffic demand from the proposed public housing development.*

Design of footbridge system under the Project

- (c) THB gave support to the construction of the recommended works in accordance with the traffic review study and requested CEDD to proceed with the detailed design and construction of the recommended works accordingly.

2.14 In June 2009, CEDD instructed Consultant Y to proceed with the implementation of the revised footbridge system comprising 4 footbridges (i.e. Footbridges A to D). In October 2009, the design proposal of the revised footbridge system was submitted to and accepted by ACABAS. The revised road works (including construction of the 4 footbridges) was gazetted under the Roads (Works, Use and Compensation) Ordinance in November 2009. The necessary statutory procedures under the Ordinance were completed in September 2010 followed by completion of the detailed design of the revised footbridge system in September 2011.

2.15 According to CEDD:

- (a) Consultant Y had then critically evaluated and compared several implementation options for the revised footbridge system;
- (b) in recognition of the significant design changes of the original Footbridges A to C and the addition of a new Footbridge D, CEDD explored the option to have the revised footbridge system (i.e. Footbridges A to D) constructed by Contractor A by way of a supplemental agreement. Under this arrangement, the construction cost of the revised footbridge system had to be agreed with Contractor A with no binding of valuation based on the rates set out in Contract A for the same or similar item of works (see Note 24 to para. 2.24(c)). In the event, Contractor A expressed its intention to undertake the works at a cost which Consultant Y considered not value for money. Consultant Y recommended CEDD not to accept this costly option;
- (c) as Footbridge D was completely new, Consultant Y advised that it fell outside the ambit of the variation provisions of Contract A. Apart from the option under (b) above, Footbridge D would either be constructed through:

Design of footbridge system under the Project

- (i) procurement of a new works contract; or
 - (ii) expanding the original scope of Contract A by way of a supplemental agreement. However, the cost estimate provided by Contractor A for this option was considered too costly and, therefore, this option was not pursued further;
- (d) for Footbridges A to C, Consultant Y considered that constructing the footbridges under a new works contract would generate numerous contractual problems due to interfacing with the main site formation works. Such contractual problems would endanger the timely completion of the infrastructure works of Contract A as well as the footbridges; and
- (e) in view of the above, it was imperative to instruct Contractor A to proceed with the construction of Footbridges A to C, though CEDD was aware of the potential cost and programme implications of variation orders (VOs — Note 21) at the material time.

2.16 In the event, Consultant Y instructed Contractor A to proceed with the construction of Footbridges A to C in March 2012, and thereafter, issued 141 VOs (later valued at a total cost of \$186 million) on the revised details of Footbridges A to C and associated works. In parallel, CEDD instructed Consultant Y to prepare a new works contract solely for the construction of Footbridge D (i.e. Contract B awarded to Contractor B in January 2013). CEDD considered that the above decision was reasonable and proper in respect of protection of government interest at the material time.

Note 21: *According to the General Conditions of Contract for Civil Engineering Works, the Engineer shall: (a) order any variation to any part of the works that is necessary for the completion of the works; (b) 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; and (c) determine the sum which in his opinion shall be added to or deducted from the contract sum as a result of issuing a VO.*

Design of footbridge system under the Project

2.17 Upon receipt of the VOs, Contractor A submitted claims for an EOT and prolongation cost (Note 22) on the grounds that there were significant modifications of footbridge design and associated site formation works. According to Consultant Y's assessment, Contractor A was entitled to an EOT that would extend the contractual completion dates of the footbridges to April 2016.

2.18 According to CEDD, HD's then required opening dates of Footbridges A, B and C were December 2016, August 2015, June 2015 respectively to match with the population intake of the proposed public housing development. Accordingly, the extended contractual completion dates of the footbridges of April 2016 as assessed by Consultant Y were later than HD's then required opening dates for both Footbridges B and C.

2.19 In the event, after obtaining the Financial Services and the Treasury Bureau's approval in December 2013, CEDD entered into a supplemental agreement with Contractor A in February 2014, under which the Government paid \$70.1 million to accelerate the completion of Footbridges B and C to match with the population intake of the proposed public housing development (\$23.1 million) and settle all claims (including the claim for prolongation cost) for events related to the construction of Footbridges A to C that occurred before the execution of the supplemental agreement (\$47 million). Contractor A also submitted claims for events related to the construction of Footbridges A to C that occurred after the execution of the supplemental agreement (Note 23).

Note 22: *Prolongation costs are generally the time related costs (e.g. the costs of a contractor's site establishment, site overheads and general plant) that are typically affected by a delay to the critical path of construction works. Works contracts include provisions for granting EOTs for completion due to events covered by the contract provisions, such as additional works, inclement weather, etc. The Engineer would assess the actual situation of each case, with the prolongation costs calculated as the time related costs additionally incurred for the relevant delay duration of those events for which prolongation costs are grantable.*

Note 23: *According to CEDD: (a) in view of the significant numbers of claims for events under Contract A, Consultant Y adopted a consolidated assessment of the cost entitlement of Contractor A; (b) the claims for events related to the construction of Footbridges A to C that occurred after the execution of the supplemental agreement were assessed together with claims related to other events under Contract A and settled at \$61.2 million; and (c) the cost entitlement of \$61.2 million granted to Contractor A was Consultant Y's assessment against Contractor A's claims, which involved a list of events. There was no breakdown of the amount for individual events.*

Design of footbridge system under the Project

2.20 According to Contract A's supplemental agreement and Contract B, Footbridges A, B, C and D were scheduled to be completed in April 2016, June 2015, March 2015 and November 2015 respectively. In the event:

- (a) Footbridges A, B, C and D were substantially completed in September 2016, January 2016, December 2015 and December 2016 respectively, which were about 5.3 to 13 months later than their scheduled completion dates (see Table 4);
- (b) Footbridges B and C were open to the public in June 2016 to match with the commencement of population intake of On Tat Estate; and
- (c) Footbridges A and D were open to the public in June 2017 to match with the commencement of population intake of On Tai Estate.

Table 4

**Completion of Footbridges A to D
(March 2015 to December 2016)**

Footbridge	Scheduled completion date	Actual completion date	No. of months later than scheduled completion date
A	21.4.2016	28.9.2016	5.3 (Note 1)
B	30.6.2015	23.1.2016	6.8 (Note 1)
C	31.3.2015	9.12.2015	8.3 (Note 2)
D	30.11.2015	30.12.2016	13.0 (Note 1)

Source: CEDD records

Note 1: EOTs for the whole period were granted.

Note 2: EOTs of 246.5 days (or 8.1 months) were granted and the remaining 6.5 days (or 0.2 month) were delays subject to liquidated damages.

Need to draw lessons from significant design changes of the footbridge system under the Project

2.21 Audit noted that the issues mentioned in paragraphs 2.22 and 2.23 below merit CEDD's attention and drawing lessons therefrom in administering future site formation and infrastructure works projects.

2.22 *Significant design changes of the footbridge system after award of Contract A.* Audit noted that:

- (a) Contract A, which involved the construction of Footbridges A to C, was tendered out in September 2007 and awarded in January 2008. Before tendering of Contract A (between August 2006 and August 2007), CEDD received views from various stakeholders (including HD, KTDC and ACABAS) on the design of the footbridge system under the Project (i.e. Footbridges A to C), including the addition of a footbridge and re-alignment of Footbridge B (see para. 2.9(a)), the adequacy of providing only 3 footbridges (see para. 2.9(c)), the need to further review the locations and number of footbridges (see para. 2.9(d)) and the need for the footbridges to be subject to further review after completion of HD's traffic review study (see para. 2.9(e));
- (b) in March 2009, HD's traffic review study was completed and proposed significant design changes of the footbridge system, including the significant modifications of the design of Footbridges A to C and the addition of a new Footbridge D (see para. 2.13(a)). The significant design changes were accepted by THB which requested CEDD to proceed with the detailed design and construction works (see para. 2.13(c));
- (c) in view of the costly price expressed by Contractor A for constructing the revised footbridge system (i.e. Footbridges A to D) or the new Footbridge D by way of a supplemental agreement (see para. 2.15(b) and (c)(ii)), Contractor A was instructed to proceed with the construction of Footbridges A to C under the excision contract clause and variation provisions of Contract A and a new contract solely for the construction of Footbridge D was awarded to Contractor B. In the event, in implementing the works arising from the significant design changes of the footbridge system:

Design of footbridge system under the Project

Footbridges A to C

- (i) 141 VOs (later valued at a total cost of \$186 million) were issued under Contract A on the revised details of Footbridges A to C and associated works (see para. 2.16);
- (ii) the Government paid \$70.1 million to accelerate the completion of Footbridges B and C, and settle all claims for events related to the construction of Footbridges A to C that occurred before the execution of the supplemental agreement (see para. 2.19); and

Footbridge D

- (iii) a new Contract B was awarded in January 2013 for the construction of the new Footbridge D (see para. 2.16) and the final contract sum was \$167.9 million (see para. 2.6). In the event, there was interfacing problem between Contracts A and B relating to site access (see Appendix C for details);
- (d) in granting its approval for CEDD to enter into the supplemental agreement with Contractor A (see para. 2.19), the Financial Services and the Treasury Bureau said that:
- (i) it noted that in face of the target completion date of the Project by 2015, CEDD practically had no choice but to tender Contract A in 2007 although the design of the new footbridge system had yet to be finalised; and
 - (ii) that said, CEDD was reminded that it should in future improve the local consultation process and better assess the requirements of local residents and District Councils for infrastructure works to avoid recurrence of similar situations; and
- (e) in this connection, the original design of Footbridges A to C included in the tender documents of Contract A in September 2007 was largely based on the consultation conducted in 2002 (i.e. about 5 years ago) in accordance with the statutory procedures (see para. 2.8). In view of the change of the housing development programme, the Project was put on hold in 2003 and resumed in October 2005 (see para. 2.8). While the consultations with

various stakeholders after the resumption of the Project (between August 2006 and August 2007) found that they had concerns on the original design of Footbridges A to C (see para. 2.9), CEDD, with the introduction of the excision contract clause coupled with the variation provisions to cater for the potential design changes of Footbridges A to C, tendered out Contract A before finalising the design of the footbridge system in order to meet the then planned population intake programme of the proposed public housing development in 2015 (see para. 2.10). As circumstances and views of stakeholders may have changed when there is a time gap between consultation and the implementation of works projects, CEDD needs to make every endeavour to consult stakeholders with a view to finalising the design of works before tendering of contracts in future.

2.23 *Scope for improvement in contract arrangement.* Audit noted that:

- (a) while CEDD anticipated that there was a high chance of introducing substantial modifications to the design of footbridge system subject to the findings of HD's traffic review study (see para. 2.9(f)), to meet the then planned population intake programme of the proposed public housing development in 2015 envisaged by HD, Contract A (involving more time-consuming construction activities on site formation works) was tendered out in September 2007 (see para. 2.10);
- (b) according to CEDD, relevant contract clauses should be incorporated into Contract A that construction of Footbridges A to C should only be commenced upon receipt of Consultant Y's instruction (see para. 2.9(f)(ii)). As a result, the construction of Footbridges A to C was included under a section subject to excision in the tender documents of Contract A. The objective was to allow CEDD to reserve the right to instruct Contractor A to commence the construction of Footbridges A to C after completion of the traffic review study by HD (see para. 2.10);
- (c) according to Contract A, a section subject to excision meant a section of works the details of which were known, but the implementation of which had not been decided upon by the Employer at the time the tender documents were issued (see para. 2.10(a)). While this contract clause allowed CEDD to decide whether and when to commence the construction of Footbridges A to C, it could not preclude claims (e.g. for EOT and prolongation cost) from Contractor A arising from the significant design

Design of footbridge system under the Project

changes of Footbridges A to C after contract award under the contract provisions (see para. 2.24(c)). In the event, 141 VOs (later valued at a total cost of \$186 million) were issued under Contract A (see para. 2.16), and CEDD needed to enter into a supplemental agreement with Contractor A relating to the construction of Footbridges A to C (see para. 2.19) and award a new Contract B for the construction of Footbridge D (see para. 2.16); and

- (d) in this connection, in October 2006, HD suggested CEDD to implement the site formation and the remaining infrastructure works (including footbridges) in phases through several works contracts (see para. 2.9(b)). In the event, a single contract (Contract A) was awarded for the construction of Footbridges A to C. There was no documentation on the justifications for adopting this single contract arrangement.

2.24 Regarding the single contract arrangement and the excision contract clause, in February and May 2022, CEDD informed Audit that:

- (a) given the site constraints and the configurations for land platforms of future developments, the proposed footbridges and site formation works were designed in an integrated manner. In this regard, the scope of Contract A covered the site formation works as well as the footbridge construction works. The construction of the footbridges under a separate works contract would generate numerous contractual problems due to interfacing with the main site formation works. Such contractual problems would endanger the timely completion of the infrastructures constructed under Contract A as well as the footbridges. It was therefore considered a practical and preferred option to include both the site formation works and the footbridge construction works in a single works contract;
- (b) under the arrangement of adopting the excision contract clause, Footbridges A to C fell within the ambit of Contract A and the relevant rates were priced in Contract A under a competitive tendering process. Under the variation provisions of Contract A, Consultant Y had the power to issue VOs to instruct Contractor A to construct the footbridges when their designs were changed after HD's traffic review study;
- (c) as mentioned in (a) above, including both the site formation works and the footbridge construction works in a single works contract could avoid

numerous contractual problems and better ensure timely completion of the footbridges. Furthermore, the valuation of VOs would be mainly based on the rates set out in Contract A for the same or similar item of works (Note 24). Having said that, the arrangement of adopting the excision contract clause, coupled with the variation provisions, could not preclude claims (e.g. for EOT and prolongation cost) from Contractor A under the contract provisions; and

- (d) in any case, by adopting the excision contract clause, CEDD could reserve the right to omit the works concerned from Contract A.

2.25 In Audit's view, there is scope for CEDD to draw lessons from the significant design changes of the footbridge system under the Project.

Audit recommendations

2.26 **Audit has recommended that, in implementing site formation and infrastructure works projects in future, the Director of Civil Engineering and Development should:**

- (a) **finalise the design of works (e.g. footbridges) before tendering of contracts, taking into account views from stakeholders and findings of relevant studies (e.g. traffic review study), with a view to avoiding significant design changes after award of contracts and claims from contractors arising therefrom;**
- (b) **where the details of some works (e.g. footbridges) could not be finalised under a time-critical project, critically consider the measures for addressing the matter (including the contract arrangement for phasing**

Note 24: *According to the General Conditions of Contract for Civil Engineering Works, regarding valuing variations: (a) any work carried out which is the same as or similar 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; and (b) any work carried out which is not the same as or similar 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.*

Design of footbridge system under the Project

of works and the provision of appropriate contract clauses) with a view to mitigating the risks arising from significant design changes after contract award (e.g. substantial works variations, contractual claims and disputes, and interfacing problems between contracts); and

- (c) document the justifications for the adoption of contract arrangement (e.g. using a single contract or multi-contract arrangement).**

Response from the Government

2.27 The Director of Civil Engineering and Development agrees with the audit recommendations.

PART 3: CONTRACT MANAGEMENT

3.1 This PART examines CEDD's work in contract management of works under the Project, focusing on:

- (a) management of slope, piling and defects rectification works under Contract A (paras. 3.2 to 3.15); and
- (b) management of landscape softworks and establishment works under Contracts A and B (paras. 3.16 to 3.24).

Management of slope, piling and defects rectification works under Contract A

Scope for enhancing the management of slope works

3.2 The works under Contract A included the formation of about 20 ha of land platforms and associated geotechnical and slope stabilisation works, and earth retaining structures (see para. 2.3(a)). According to CEDD, in connection with the construction works under Contract A, there were 1 concrete block falling incident (occurred in May 2009), 3 landslide incidents (occurred between May 2013 and May 2015), and 2 other events relating to damage of retaining walls under construction (occurred in July and September 2012 respectively) (Note 25). Table 5 shows these incidents and other events.

Note 25: *According to CEDD: (a) while both incidents and other events occurred within Contract A's works site, the former affected areas outside the site boundary and the latter did not; and (b) the performance of Contractor A in aspects related to the incidents/other events (e.g. standard of temporary works such as temporary drainage, provision and maintenance of safe working environment) was duly reflected in the relevant quarterly performance reports of Contractor A and/or discussed at the relevant site meetings with Contractor A.*

Table 5

**Incidents and other events under Contract A
(May 2009 to May 2015)**

Item	Date	Particulars (Note 1)
(A) Incidents (Note 2)		
<i>Concrete block falling incident</i>		
(a)	14 May 2009	During the site clearance/preparation works for the construction of a retaining wall (hereinafter referred to as Retaining Wall A), a concrete block (dimensions of about 1 m × 1 m × 1 m) rolled down from the edge of a slope and caused damage to two panels of hoarding located adjacent to the slope toe, a catchpit with concrete cover located at the slope toe and a lamp post cover located along pedestrian footpath of Po Lam Road (see para. 3.3(a) for the audit findings).
<i>Landslide incidents</i>		
(b)	22 May 2013	The landslide occurred on a slope (see Photograph 7) with works under construction at the time of the incident. The majority of the landslide debris deposited on Lee On Road (see Photograph 8), resulting in temporary closure of Lee On Road for 2 days (see para. 3.3(b) for the audit findings).
(c)	22 May 2013	A distress involving dislodgement of facing panels and loss of soil occurred at a retaining wall (hereinafter referred to as Retaining Wall B) which was under construction at the time of the incident. The majority of the washout debris was deposited over the hillside in front of Retaining Wall B with a minor amount of debris overspilling the culvert below the wall onto Shun On Road, resulting in temporary closure of a section of Shun On Road for 18 days (see para. 3.3(b) for the audit findings).
(d)	1 May 2015	Spilling of washout water occurred at an existing catchpit using as a temporary drainage system during the construction works under Contract A. The washout water damaged a slope at the downstream area of the temporary drainage system. Part of the slope was eroded (see para. 3.3(c) for the audit findings).

Table 5 (Cont'd)

Item	Date	Particulars (Note 1)
(B) Other events (Note 2)		
(e)	24 July 2012	Retaining Wall B under construction was damaged during the passage of typhoon (see para. 3.3(b)(i) and (iii) for the audit findings).
(f)	24 September 2012	A retaining wall under construction was damaged during the hoist of a red rainstorm warning signal (see para. 3.3(b)(i) for the audit findings).

Source: CEDD records

Note 1: For all the above incidents/other events, fortunately, no person was injured.

Note 2: According to CEDD, while both incidents and other events occurred within Contract A's works site, the former affected areas outside the site boundary and the latter did not.

Photograph 7

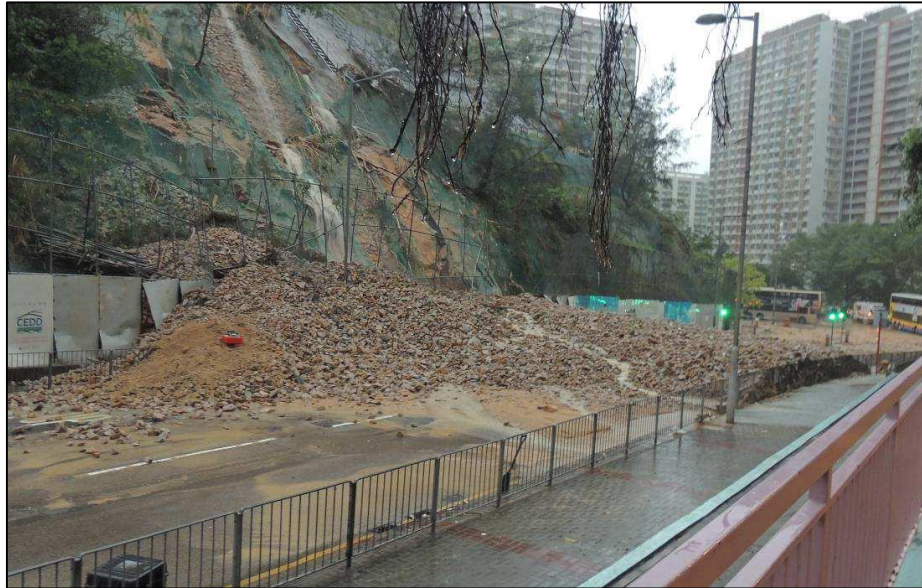
**Landslide occurred on a slope
(22 May 2013)**



Source: CEDD records

Photograph 8

Landslide debris deposited on Lee On Road (22 May 2013)



Source: CEDD records

3.3 Audit noted that:

- (a) **Concrete block falling incident in May 2009 (see item (a) in Table 5 in para. 3.2).** According to Consultant Y:
 - (i) the causes of this incident included no protective measures (e.g. fence and barrier) taken at the slope edge or at the lower sloping area to prevent any material from rolling down the slope, and low awareness of frontline supervisors and workers in taking proactive measures to guard against falling objects from height; and
 - (ii) after the incident, a barrier was provided at the sloping area immediately below the working area to prevent any debris and loose material from rolling down the slope, and training had been provided to the relevant frontline supervisors and workers to strengthen their awareness in taking relevant proactive measures;

- (b) *Landslide incidents in May 2013 (see items (b) and (c) in Table 5 in para. 3.2).* The salient points related to the 2 landslide incidents are as follows:
- (i) according to CEDD, the intense rainstorm in the early morning of 22 May 2013 caused a major washout failure of the slope concerned and distress at Retaining Wall B. These two features (i.e. slope works and Retaining Wall B) were under construction at the time of the incidents. Subsequent landslide investigations revealed that the temporary drainage system at the time of the incidents was unable to cope with the surface runoff arising from the intense rainfall, leading to the area in the vicinity of the features impacted by large amounts of surface water and consequently resulting in the 2 incidents. In this connection, Audit noted that the 2 other events occurred earlier in July and September 2012 respectively (see items (e) and (f) in Table 5 in para. 3.2) were also resulted from the inadequate capacity of the temporary drainage system;
 - (ii) after the incidents, the temporary drainage design was further reviewed. According to CEDD, the review was completed in June 2013 and the recommended temporary drainage measures were carried out and inspected through regular site inspections and safety walks to maintain their effectiveness;
 - (iii) regarding Retaining Wall B damaged in the landslide incident, CEDD commissioned a geotechnical expert to conduct an independent review of Retaining Wall B and the damage resulting from the rainstorm. The review was completed in September 2013. The geotechnical expert commented that the failure of Retaining Wall B was a recurrence of the event in July 2012 (see item (e) in Table 5 in para. 3.2), and provided various recommendations, including design requirements and remedial works for Retaining Wall B. In the same month, CEDD requested Consultant Y to oversee the completion of the remedial works, including conveying the professional advices given by the geotechnical expert to all the parties concerned (e.g. Contractor A and interface contractors) and coordinating with them to implement the recommended follow-up actions if necessary. According to CEDD, further to the recommendations made by the geotechnical expert, CEDD,

Contract management

Consultant Y and Contractor A completed the design review and implemented slope monitoring measures from 2013 to 2018; and

- (iv) in January 2014, the Geotechnical Engineering Office (GEO) of CEDD promulgated a GEO Technical Guidance Note on “Guidelines on Temporary Drainage Provisions and Precautionary Measures against Severe Rainfall during Site Formation Works and Construction of Reinforced Fill Structures”. This technical guidance note serves to remind practitioners of the need for adequate temporary drainage provisions, and precautionary and mitigation measures against severe rainfall during site formation works and construction of reinforced fill structures, with particular reference to the observations and lessons learnt from the 2 landslide incidents in May 2013; and

- (c) *Landslide incident in May 2015 (see item (d) in Table 5 in para. 3.2).* Similar to the 2 landslide incidents in May 2013, this incident was also resulted from the inadequate capacity of the temporary drainage system during the construction stage.

3.4 In Audit’s view, in implementing works projects in future, CEDD needs to:

- (a) remind its contractors to:
 - (i) take adequate protective measures for working on slopes (particularly for works close to or at the slope edge near public area); and
 - (ii) provide appropriate training to enhance safety awareness of their staff; and
- (b) remind its staff and consultants to follow the guidelines on temporary drainage provisions and precautionary measures against severe rainfall during site formation works and construction of reinforced fill structures.

Need to make better estimate of piling works involved in ordering works variations

3.5 In March 2012, Consultant Y issued VO A (later valued at a cost of \$174.7 million) on the revised details, including piling works, of Footbridges A to C. Under VO A:

- (a) the tentative rockhead (Note 26) levels and pile lengths for the footbridges were specified (Note 27). For Footbridge C, based on the tentative rockhead level, the tentative total pile length was 1,666 m; and
- (b) the actual length of piles would be determined from the information on rockhead level obtained from pre-drill boreholes during pile construction.

3.6 Before the commencement of piling works for Footbridge C, pre-drill boreholes were sunk to obtain ground information (including rockhead level) for determination of pile length. Contractor A found that the actual rockhead level was lower than that specified in VO A. In the event, the as-built total pile length for Footbridge C was 2,164.3 m, which was 498.3 m (30%) longer than the total pile length of 1,666 m (see para. 3.5(a)) as specified in VO A.

3.7 Contractor A submitted a claim for an EOT on the grounds that there was a substantial increase in pile length for Footbridge C (Note 28) arising from a lower

Note 26: *According to CEDD, rockhead is defined as the upper elevation of a rock core of at least 5 m long that is made up of Grade III or better rock (Grades I and II). According to the Guide to Rock and Soil Descriptions issued by CEDD, decomposition grades of rock material are classified into Grades I to VI (with descending rock hardness).*

Note 27: *According to CEDD, the tentative rockhead levels and pile lengths were based on available ground investigation information in preparing the VO for the revised footbridges.*

Note 28: *According to CEDD, the cost associated with the variation in pile length was \$3.3 million.*

Contract management

rockhead level. According to Consultant Y's assessment of Contractor A's claim (Note 29):

- (a) additional time was required for installing piles at Footbridge C arising from a substantial increase in pile length;
- (b) Contractor A was entitled to EOTs of 67 days for completing Footbridge C and the related establishment works (involving two sections of works of Contract A) (Note 30); and
- (c) the commencement of piling works for Footbridge A depended on the completion of piling works for Footbridge C. The delay in completion of Footbridge C had a knock-on effect on the completion of Footbridge A and the related establishment works (Note 31). As such, Contractor A was entitled to EOTs of 63 days for completing Footbridge A and the related establishment works (involving two sections of works of Contract A) (see Note 30 to (b) above).

3.8 In May 2022, CEDD informed Audit that:

- (a) for the purpose of preparing tenders or VOs, it was a common practice in piling works to estimate the tentative rockhead levels by interpolation of borehole information in the vicinity of the works. Such method generally provided reasonable estimation of rockhead levels and avoided the time and cost implications of conducting full geotechnical investigation works during the course of construction; and

Note 29: *According to CEDD, the time for carrying out the additional piling works was not covered by the supplemental agreement (see para. 2.19) and hence, Contractor A was entitled to claim for an EOT.*

Note 30: *According to Consultant Y's assessment, Contractor A was not entitled to claim for additional expenditure for the EOTs granted.*

Note 31: *According to CEDD, although the landscape softworks and establishment works for Footbridge A were deleted from Contract A and carried out under Contract B (see para. 3.20), there were landscape softworks and establishment works in the vicinity of Footbridge A required to be completed under Contract A.*

- (b) as Contract A was a remeasurement contract and that VO A was valued according to the contract provisions (see Note 24 to para. 2.24(c)) regardless of the difference between the tentative and actual rockhead levels, there would be no overpayment to Contractor A as a result.

3.9 For better cost control, Audit considers that, in implementing works projects in future, CEDD needs to remind its staff and consultants to make better estimate of piling works involved in ordering works variations.

Need to ensure the timely completion of defects rectification works

3.10 Under Contract A, Contractor A was required to carry out maintenance works including any works of repair or rectification, or make good any defect, imperfection, shrinkage, settlement or other fault at its own cost within the 12-month maintenance period. Upon the expiry of the maintenance period, all defects rectification works should have been completed to the satisfaction of Consultant Y. Consultant Y should then issue a maintenance certificate stating the date on which Contractor A should have completed its obligation to execute the works under Contract A.

3.11 Contract A was substantially completed in December 2016 and the maintenance period expired in December 2017. Audit noted that:

- (a) according to Consultant Y in October 2017 and May 2018:
 - (i) a significant amount of defects rectification works had yet to be completed after the expiry of the maintenance period (Note 32);

Note 32: *According to CEDD: (a) lists of defects rectification works, with a breakdown by the nature of works, had been regularly prepared by Consultant Y for progress monitoring during and after the maintenance period, and up to the handover of completed works to the maintenance departments; and (b) there was no single comprehensive list of defective works items for the whole Contract A readily available during and after the maintenance period.*

Contract management

- (ii) the slow progress of defects rectification works had affected the normal operation of user departments and caused inconvenience to the public; and
 - (iii) Contractor A's delay in completion of the remaining defects rectification works had seriously hindered the completion of Contract A and handover procedures with the maintenance departments; and
- (b) according to CEDD, the defects rectification works (excluding the defects rectification works for landscape softworks and establishment works — see para. 3.17(b)(i)) were completed in July 2020 (i.e. about 2.6 years after the expiry of the maintenance period in December 2017).

3.12 According to CEDD:

- (a) it and Consultant Y had closely monitored the progress of defects rectification works under Contract A through weekly progress meetings with Contractor A. Consultant Y had also issued letters to Contractor A from time to time urging Contractor A to expedite the completion of defects rectification works;
- (b) to facilitate a better monitoring of the progress of the remaining defects rectification works, in August 2017, Consultant Y requested Contractor A to prepare a schedule for completing the remaining defects rectification works. In March 2018, Contractor A provided a schedule with 65 milestones for completing such works by August 2018, which was agreed by CEDD and Consultant Y. However, Contractor A could not achieve some of the milestones on schedule and needed to continue to carry out the remaining defects rectification works in 2019;
- (c) the poor performance of Contractor A in carrying out the defects rectification works was duly reflected in the quarterly performance reports of Contractor A during the period from 2017 to 2019. CEDD further imposed additional six-weekly intervening performance reports between the normal reporting periods from March 2018 to May 2019 to intensify the monitoring of the progress of defects rectification works; and

- (d) through close monitoring of works, issue of warning letters and meetings with the management of Contractor A, all defects rectification works were completed in July 2020.

3.13 In Audit's view, in implementing works projects in future, CEDD needs to remind its staff and consultants to closely monitor the defects rectification works of contractors and take necessary measures to ensure the timely completion of such works.

Audit recommendations

3.14 **Audit has *recommended* that, in implementing works projects in future, the Director of Civil Engineering and Development should:**

- (a) **remind CEDD contractors to:**
 - (i) **take adequate protective measures for working on slopes (particularly for works close to or at the slope edge near public area); and**
 - (ii) **provide appropriate training to enhance safety awareness of their staff; and**
- (b) **remind CEDD staff and consultants to:**
 - (i) **follow the guidelines on temporary drainage provisions and precautionary measures against severe rainfall during site formation works and construction of reinforced fill structures;**
 - (ii) **make better estimate of piling works involved in ordering works variations; and**
 - (iii) **closely monitor the defects rectification works of contractors and take necessary measures to ensure the timely completion of such works.**

Response from the Government

3.15 The Director of Civil Engineering and Development agrees with the audit recommendations.

Management of landscape softworks and establishment works under Contracts A and B

3.16 After the substantial completion of Contracts A and B in December 2016, Contractors A and B were required to carry out the remaining landscape softworks (Note 33) and establishment works (see Note 3 to para. 1.6). After completion of establishment works, the established vegetation would be inspected by the maintenance departments and then handed over to them for maintenance.

Long time taken to complete all the landscape softworks and establishment works

3.17 Audit noted that:

- (a) the landscape softworks and establishment works under Contract A were completed in phases between January 2020 and September 2021 (i.e. 3 years to nearly 5 years after the substantial completion of Contract A in December 2016); and
- (b) as of January 2022:
 - (i) the defects rectification works for landscape softworks and establishment works, and the inspection on the established vegetation with the maintenance department were still in progress;
 - (ii) the handover procedures with the maintenance department had not been completed; and

Note 33: *According to CEDD, some landscape softworks (e.g. planting of vegetation) were completed before the substantial completion of Contracts A and B.*

(iii) the account of Contract A had not been finalised.

3.18 According to CEDD:

- (a) the landscape softworks and establishment works under Contract A could only be carried out after the completion of defects rectification works on slopes, where landscape softworks would be carried out. The delay in completion of defects rectification works (see para. 3.11(b)) had a knock-on effect on the landscape softworks and establishment works that followed;
- (b) it and Consultant Y had closely monitored the progress of landscape softworks and establishment works under Contract A through weekly progress meetings with Contractor A. Consultant Y had also issued letters to Contractor A from time to time urging Contractor A to expedite the completion of landscape softworks and establishment works (including defects rectification works). The poor performance of Contractor A in completing the rectification of established landscape softworks in 2021 was duly reflected in the relevant quarterly performance report of Contractor A;
- (c) the defects rectification works and the inspection and handover procedures with the maintenance department on the established vegetation would be completed in the second quarter of 2022; and
- (d) after completion of handover procedures, maintenance certificate would be issued to Contractor A and the account of Contract A would be finalised in the third quarter of 2022.

3.19 In Audit's view, CEDD needs to:

- (a) ensure that all the landscape softworks and establishment works (including the defects rectification works, inspection and handover procedures with the maintenance department) under Contract A are completed as scheduled; and
- (b) finalise the account of Contract A as soon as possible.

Scope for improvement in documentation of assessment of contractor's claims

3.20 Contract A included the landscape softworks and establishment works for Footbridges A to C. Such works were also included in Contract B under a section subject to excision (Note 34) (hereinafter referred to as Section A). In August 2015, Consultant Y instructed Contractor B to proceed with the landscape softworks and establishment works for Footbridge A under Section A of Contract B (Note 35). Due to the unavailability of Footbridge A (the actual completion date of Footbridge A was 28 September 2016 — see Table 4 in para. 2.20(a)) for carrying out the related works, Contractor B submitted claims for an EOT and prolongation cost. According to Consultant Y's assessment of March 2019 on Contractor B's claims (hereinafter referred to as Claim A):

- (a) Footbridge A was unavailable for Contractor B to commence the landscape softworks due to the delay in completion of Footbridge A by Contractor A; and

Note 34: *According to Contract B: (a) a section subject to excision means a section of works which is identified in the particular specification and drawing of Contract B, but the implementation of which has not been decided upon by the Employer at the time the tender documents are issued; and (b) the works shall only be implemented upon a subsequent decision of the Employer, followed by a written instruction from the Engineer. According to Consultant Y, the inclusion of the landscape softworks and establishment works for Footbridges A to C in Contract B under a section subject to excision was to allow flexibility in carrying out these works by a third party (other than Contractor A) without affecting the handover of completed works (other than footbridges) in Contract A.*

Note 35: *In July 2013, the landscape softworks and establishment works for Footbridge A were deleted from Contract A through a VO issued by Consultant Y. According to CEDD, there was no monetary claim submitted by Contractor A for omitting such works from Contract A. In August 2015, Consultant Y: (a) instructed Contractor B to proceed with the works under Section A of Contract B; and (b) deleted the landscape softworks and establishment works for Footbridges B and C from Section A as these works were carried out under Contract A. According to CEDD, a supplemental agreement under Contract A was executed in February 2014 (see para. 2.19) to advance the completion of Footbridges B and C (including the landscape softworks and establishment works) to earlier dates agreeable to HD while omitting the landscape softworks and establishment works for Footbridge A. Hence, in August 2015, the landscape softworks and establishment works for Footbridges B and C were deleted from Section A of Contract B in order to commensurate with the committed scope of works under the abovementioned supplemental agreement.*

- (b) Contractor B's Claim A was valid. Contractor B was entitled to an EOT of 514 days (from 28 November 2016 to 26 April 2018) for completing the landscape softworks and establishment works for Footbridge A under Section A and prolongation cost of \$4.8 million associated with the delay to Section A.

3.21 Audit noted that there was scope for improvement in assessment of Claim A. The salient points are as follows:

- (a) when vetting Consultant Y's assessment of Claim A in March 2019, CEDD:
 - (i) noted Consultant Y's assessment of Contractor B's entitlement of \$4.8 million for the prolongation cost; and
 - (ii) reminded Consultant Y that the prolongation cost entitlement under Claim A, including the additional site running cost and head office overhead, should be solely related to Section A for the period from 31 December 2017 to 26 April 2018 (Note 36). Should there be expenses related to other sections of works, adjustment on the cost entitlement should be made. In April 2019, Consultant Y said that it noted CEDD's view; and
- (b) in response to Audit's enquiries, in February and April 2022, CEDD said that:
 - (i) the prolongation cost of \$4.8 million granted to Contractor B was not solely for the landscape softworks and establishment works for Footbridge A under Section A;

Note 36: *According to CEDD: (a) of the 514 days (from 28 November 2016 to 26 April 2018) of EOT granted to Contractor B for Section A (see para. 3.20(b)), the prolongation cost before 31 December 2017 had been covered by other claims; and (b) the prolongation cost under Claim A was assessed for the period of 117 days from 31 December 2017 to 26 April 2018.*

Contract management

- (ii) during the period from 31 December 2017 to 26 April 2018, Contractor B also carried out various site works which stemmed from a number of VOs (e.g. lighting works of Footbridge D, tree risk assessment and road works) issued during the maintenance period of another section of works (hereinafter referred to as Section B) of Contract B. Notice of claim associated with the VOs concerned was served by Contractor B;
- (iii) in the course of the claim assessment, Consultant Y had taken into account additional expenditures arising from the VOs concerned under Section B together with the works under Section A; and
- (iv) upon its clarification, in April 2022, Consultant Y:
 - confirmed that the prolongation cost of \$4.8 million was a reasonable and fair assessment and that there was no overpayment to Contractor B based on the consolidated assessment of the additional expenditures arising from the VOs concerned under Section B and the works under Section A; and
 - admitted that it had not explicitly stated that its assessment was not limited to the landscape softworks and establishment works for Footbridge A under Section A when seeking CEDD's comments on Claim A.

3.22 In Audit's view, in implementing works projects in future, CEDD needs to remind its consultants to properly document their assessments of contractors' claims.

Audit recommendations

3.23 **Audit has *recommended* that the Director of Civil Engineering and Development should:**

- (a) **ensure that all the landscape softworks and establishment works (including the defects rectification works, inspection and handover procedures with the maintenance department) under Contract A are completed as scheduled;**
- (b) **finalise the account of Contract A as soon as possible; and**
- (c) **in implementing works projects in future, remind CEDD consultants to properly document their assessments of contractors' claims.**

Response from the Government

3.24 The Director of Civil Engineering and Development agrees with the audit recommendations.

PART 4: MANAGEMENT OF FOOTBRIDGES A TO D AND POST-COMPLETION REVIEW

4.1 This PART examines the management of Footbridges A to D by the relevant government departments (paras. 4.2 to 4.17) and post-completion review of the Project by CEDD (paras. 4.18 to 4.21).

Management of Footbridges A to D

4.2 The footbridge system comprising Footbridges A to D was constructed for connecting the planned development (including the public housing development (i.e. On Tat Estate and On Tai Estate)) at the site under the Project with the neighbouring communities of Sau Mau Ping and Shun On. After completion of works, CEDD handed over Footbridges A to D to the relevant government departments for maintenance (see also Note 7 to para. 1.10), including:

- (a) **HyD.** It is responsible for the maintenance of structures and associated components of the footbridges (e.g. footbridge decks, staircases, lift towers and drainage). According to HyD, the maintenance work is outsourced to a contractor under the related term contract for management and maintenance of roads (Note 37); and
- (b) **EMSD.** It is the maintenance agent of HyD for the electrical and mechanical works of lifts (e.g. lift car, lift mechanics and power supply) and lighting works. According to EMSD, the maintenance work is outsourced to contractors under the related maintenance contracts (Note 38).

Note 37: *As of January 2022, HyD had outsourced the maintenance of structures and associated components of Footbridges A to D to a contractor under a 6-year term contract for management and maintenance of roads in Kowloon East excluding expressways and high speed roads.*

Note 38: *As of January 2022, EMSD had outsourced the maintenance of lifts and lighting works of Footbridges A to D to contractors under 4 contracts, including: (a) 3 term contracts for the comprehensive maintenance and repair of lift installations at various premises of the Government each for a 3-year period; and (b) 1 term contract for the fault attendance, comprehensive maintenance, repair and replacement of special lighting systems at various premises of HyD for a 3.5-year period.*

Scope for enhancing lift services at Footbridges A to D

4.3 According to EMSD:

- (a) there are a total of 17 lifts installed at Footbridges A to D under its maintenance; and
- (b) during the 3-year period from January 2019 to December 2021, there were a total of 183 cases involving suspension of lift services at Footbridges A to D (Note 39), of which 143 (78%) involved equipment failure and required repair work to resume lift services, and 40 (22%) did not involve equipment failure and did not require such repair work (Note 40) (see Table 6). The duration of suspension of lift services ranged from 6 minutes to 242 hours (or 10 days) (see Table 7), averaging 10 hours.

Note 39: *According to EMSD, apart from the 183 cases, there were a total of 223 cases not involving suspension of lift services (e.g. malfunction of air-conditioning system for lift car) at Footbridges A to D during the 3-year period from January 2019 to December 2021.*

Note 40: *According to EMSD, lift passengers could notify the lift maintenance contractor by pressing the alarm bell button of the lift or calling the service hotline displayed for assistance. After receiving notifications, registered lift worker would be deployed to the site to check the lift concerned. The lift services would be resumed after checking or carrying out repair work (e.g. replacement or repairing of lift parts) if needed.*

Management of Footbridges A to D and post-completion review

Table 6

Cases involving suspension of lift services at Footbridges A to D (January 2019 to December 2021)

Footbridge	No. of lifts (a)	No. of cases over 3-year period			Average no. of cases per lift per year (e) = (d) ÷ (a) ÷ 3
		Requiring repair work (b)	Not requiring repair work (c)	Total (d) = (b) + (c)	
A	3	38 (76%)	12 (24%)	50 (100%)	6
B	5	52 (85%)	9 (15%)	61 (100%)	4
C	5	30 (67%)	15 (33%)	45 (100%)	3
D	4	23 (85%)	4 (15%)	27 (100%)	2
Overall	17	143 (78%) (Note 1)	40 (22%) (Note 2)	183 (100%)	4

Source: EMSD records

Note 1: According to EMSD, of the 143 cases requiring repair work, 86 (60%) involved major repairs of electrical and mechanical parts (e.g. replacement of control board, suspension ropes and motor) and 57 (40%) involved minor repairs of electrical and mechanical parts (e.g. fine-tuning door alignment, replacement of lift buttons and signal reset).

Note 2: According to EMSD, the 40 cases did not involve equipment failure and no repair work was required to resume lift services. The reasons for suspension of lift services for these cases were related to passenger behaviour or other external factors (e.g. debris at door sill and power interruption).

Management of Footbridges A to D and post-completion review

Table 7

**Duration of suspension of lift services at Footbridges A to D
(January 2019 to December 2021)**

Duration of suspension of lift services	No. of cases				
	Footbridge A	Footbridge B	Footbridge C	Footbridge D	Overall
6 minutes to 3 hours	32 (64%)	40 (66%)	34 (75%)	16 (59%)	122 (67%)
More than 3 to 6 hours	8 (16%)	2 (3%)	3 (7%)	3 (11%)	16 (9%)
More than 6 to 12 hours	2 (4%)	7 (11%)	3 (7%)	2 (7%)	14 (7%)
More than 12 to 48 hours	6 (12%)	10 (16%)	4 (9%)	4 (15%)	24 (13%)
More than 48 to 120 hours	1 (2%)	1 (2%)	1 (2%)	1 (4%)	4 (2%)
More than 120 hours (Note 1)	1 (2%) (Note 2)	1 (2%) (Note 3)	– (0%)	1 (4%) (Note 4)	3 (2%)
Total	50 (100%)	61 (100%)	45 (100%)	27 (100%)	183 (100%)

} 7 (4%)

Source: EMSD records

Note 1: The suspension with the longest duration lasted for 242 hours (or 10 days).

Note 2: According to EMSD, this case occurred from late February to early March 2021 and involved a lift at Footbridge A with services suspended for 242 hours (or 10 days) due to the replacement of suspension ropes as recommended by the registered lift contractor after routine inspection.

Note 3: According to EMSD, this case occurred in June 2020 and involved a lift at Footbridge B with services suspended for 177 hours (or 7 days), which was caused by flooding during the hoist of a black rainstorm warning signal on 6 June 2020. The lift car and some of the associated components were flooded with dirty water and required intensive cleaning, repairing and testing.

Note 4: According to EMSD, this case occurred in December 2019 and involved a lift at Footbridge D with services suspended for 180 hours (or 8 days) due to the malfunction of the lift motor, which was removed and returned to the vendor for repair work.

Management of Footbridges A to D and post-completion review

4.4 Audit noted that:

- (a) for the lifts at Footbridge A, the average number of cases involving suspension of lift services (i.e. 6 cases per lift per year over the 3-year period from January 2019 to December 2021) was the highest among the lifts at the 4 footbridges (see Table 6 in para. 4.3(b));
- (b) during the 3-year period from January 2019 to December 2021, of the 143 cases involving suspension of lift services at Footbridges A to D and requiring repair work, 86 (60%) involved major repairs of electrical and mechanical parts (see Note 1 to Table 6 in para. 4.3(b)). Of the 86 cases, 7 cases involved suspension of lift services of more than 48 hours (see Table 7 in para. 4.3(b)). The longest suspension duration of 242 hours (or 10 days) involved a lift at Footbridge A (see Note 2 to Table 7 in para. 4.3(b)); and
- (c) at a meeting of KTDC in March 2021, a District Council Member raised concerns about the lift services at the 2 footbridges connecting to On Tai Estate (i.e. Footbridges A and D), and said that one lift at Footbridge A had broken down for more than a week (Note 41) and the lifts at Footbridges A and D had been suspended from operation and undergone repair work for more than 80 times since their commissioning.

Note 41: *According to EMSD, this case referred to the case with the longest suspension duration occurred from late February to early March 2021 (see Note 2 to Table 7 in para. 4.3(b)).*

Management of Footbridges A to D and post-completion review

- 4.5 In April 2022, EMSD informed Audit that:
- (a) except for the 5 lifts at Footbridge B with services suspended at the same period of time during the hoist of a black rainstorm warning signal on 6 June 2020, the services of all lifts at the same footbridge had not been suspended at the same period of time since EMSD took up the maintenance of the electrical and mechanical works of the lifts at Footbridges A to D (Note 42);
 - (b) during the 3-year period from January 2019 to December 2021, there were no records of reported lift incident (Note 43); and
 - (c) enhancement measures (e.g. conducting additional inspections, keeping more spare parts and notifying users about the maintenance schedules by posting the schedules in the lift towers) had been implemented and would continue to be carried out. When maintenance work was in progress, there would be related notices at all landings of lifts.

4.6 The public housing development (i.e. On Tat Estate and On Tai Estate) is located at land platforms formed under the Project, which are about 30 to 50 m above its surroundings. Footbridges A to D together with their lift services serve an important function of connecting the public housing development with the neighbouring communities of Sau Mau Ping and Shun On, and providing a barrier-free environment. In Audit's view, HyD needs to, in collaboration with EMSD, continue to closely monitor the proper functioning of the lifts at Footbridges A to D (particularly the lifts at Footbridge A which had comparatively more suspension cases on average) and take enhancement measures as necessary.

Note 42: *During the 3-year period from January 2019 to December 2021, there were 3 occasions involving suspension of the services of 2 lifts at the same footbridge at the same period of time for about 2 to 3 hours (1 occasion each for Footbridges A to C). According to EMSD, during the suspension period of the 3 occasions, it was noted that other lifts were still available for use at those footbridges.*

Note 43: *According to EMSD, a reported lift incident refers to a lift incident belonging to a type as listed in Schedule 7 of the Lifts and Escalators Ordinance (Cap. 618). Examples of a reported lift incident are: (a) death or injury of a person involving a lift or any associated equipment or machinery of a lift; (b) a breakage of any suspension rope of a lift; and (c) a failure of any brake, overload device, safety component or safety equipment of a lift.*

Water dripping problems related to drainage design of footbridges

4.7 In October 2017, HyD received a complaint from a LegCo Member about dripping water from Footbridge A. HyD then conducted a site inspection and observed that the dripping water might have originated from the planters on Footbridge A. HyD considered that the problem of the dripping water might be related to the drainage design of Footbridge A, in particular how the excess water from the planters was collected after watering, and requested CEDD to instruct Consultant Y to review the drainage design of Footbridge A as well as that of Footbridges B to D as similar design might have been adopted.

4.8 In January 2018, CEDD informed HyD that:

- (a) Consultant Y had reviewed the drainage design for the planters at the decks of Footbridges A to D; and
- (b) aluminium angles had been added to all the footbridge decks underneath the planters to guide all excess water from the planters towards the drainage system at the footbridge decks to eliminate the possibility of water dripping arising from the planters.

4.9 In Audit's view, CEDD needs to take measures to ensure that drainage design of footbridges can cope with water dripping problems (e.g. from the planters after watering) in future works projects involving such works.

Need to keep under review the usage of Footbridges A to D

4.10 The Transport Department (TD) has the overall responsibility for the planning and provision of pedestrian crossing facilities, including footbridges and subways. HyD is responsible for the maintenance of structures and associated components of Footbridges A to D (see para. 4.2(a)). EMSD is the maintenance agent of HyD for the electrical and mechanical works of lifts and lighting works (see para. 4.2(b)). Regarding the usage of Footbridges A to D, Audit noted that:

- (a) according to TD, traffic surveys were conducted during the AM and PM peak periods at Footbridge A on 1 day in September 2018 and 7 days in December 2021, and Footbridge B on 1 day in June 2020 (Note 44). According to the traffic surveys, the pedestrian flows thereat were smooth except that there was room for improvement in the lift services to reduce the lift waiting time;
- (b) there would be another housing development at the Anderson Road Quarry site (site formation and associated infrastructure works commenced in December 2016 for progressive completion from 2022 onwards) nearby the public housing development at the land platforms formed under the Project;
- (c) according to a LegCo paper of October 2020:
 - (i) the housing development at the Anderson Road Quarry site involved 8 residential sites for public housing, 1 residential site for private housing, and 2 residential sites for combined private housing and starter homes (Note 45); and

Note 44: *According to TD, traffic surveys at Footbridges A and B were conducted by CEDD and TD respectively.*

Note 45: *According to the report on “Planning Study on Future Land Use at Anderson Road Quarry — Feasibility Study” of February 2014, there were a total of 11 residential sites under the housing development at the Anderson Road Quarry site (1 residential site for public housing and 10 residential sites for private housing) to accommodate a total population of about 25,000. Following the decision of the Government in 2019, 7 residential sites originally planned for private housing were reallocated to public housing development.*

Management of Footbridges A to D and post-completion review

- (ii) the phased population intake would commence from 2023-24 onwards. Upon full population intake in around 2026, the Anderson Road Quarry site would accommodate a total population of about 30,000;
- (d) according to the report on “Planning Study on Future Land Use at Anderson Road Quarry — Feasibility Study” of February 2014, it was planned to connect the housing development at the Anderson Road Quarry site with the neighbouring communities (i.e. Shun Lee Estate, Shun Tin Estate, Sau Mau Ping Estate and Po Tat Estate) via Footbridges A to D; and
- (e) the additional population would put further pressure on the pedestrian flows and usage of Footbridges A to D, including the lift services at these footbridges.

4.11 In view of the changing developments at the areas nearby the public housing development at the land platforms formed under the Project and to match the need of local residents for accessing the neighbouring communities via Footbridges A to D, Audit considers that:

- (a) TD needs to, in collaboration with the relevant government departments, keep under review the usage of Footbridges A to D, including the adequacy of pedestrian capacity; and
- (b) HyD needs to, in collaboration with EMSD, keep monitoring the performance of the lifts at Footbridges A to D to maintain reliable and efficient services.

Audit recommendations

4.12 **Audit has recommended that the Director of Highways should, in collaboration with the Director of Electrical and Mechanical Services, continue to closely monitor the proper functioning of the lifts at Footbridges A to D (particularly the lifts at Footbridge A which had comparatively more suspension cases on average) and take enhancement measures as necessary.**

4.13 **Audit has recommended that the Director of Civil Engineering and Development should take measures to ensure that drainage design of footbridges can cope with water dripping problems (e.g. from the planters after watering) in future works projects involving such works.**

4.14 **Audit has recommended that:**

- (a) **the Commissioner for Transport should, in collaboration with the relevant government departments, keep under review the usage of Footbridges A to D, including the adequacy of pedestrian capacity; and**
- (b) **the Director of Highways should, in collaboration with the Director of Electrical and Mechanical Services, keep monitoring the performance of the lifts at Footbridges A to D to maintain reliable and efficient services.**

Response from the Government

4.15 **The Director of Highways and the Director of Electrical and Mechanical Services agree with the audit recommendations in paragraphs 4.12 and 4.14(b).**

4.16 **The Director of Civil Engineering and Development agrees with the audit recommendation in paragraph 4.13.**

4.17 **The Commissioner for Transport agrees with the audit recommendation in paragraph 4.14(a). She has said that, while TD considers that the traffic assessments**

Management of Footbridges A to D and post-completion review

conducted have demonstrated the adequacy of capacity of pedestrian connectivity facilities of the Anderson Road Quarry site, TD will, in collaboration with the relevant government departments, keep under review the usage of Footbridges A to D with regard to the gradual population intake of the Anderson Road Quarry site.

Post-completion review

4.18 According to the Project Administration Handbook for Civil Engineering Works issued by CEDD:

- (a) a post-completion review is a useful project management tool and shall be conducted upon the substantial completion of a major consultancy agreement or a major works contract on projects under the Public Works Programme. The emphasis and objective of the review are to gain maximum benefit from the experience accrued, rather than to apportion blame;
- (b) there is no rigid definition for major projects or the minimum number of reviews to be undertaken by departments. As a broad guideline, post-completion reviews are generally not warranted for consultancy agreements and works contracts of a project which has a total cost less than \$500 million or of a project which does not involve complicated technical and management issues;
- (c) indicators that a project involves complicated issues may include project involving a claim of a substantial sum, say over \$1 million;
- (d) 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. For a project that comprises a number of contracts/consultancy agreements, the project office may elect, in view of the benefit of an overall review, to conduct a single post-completion review upon the substantial completion of the last contract; and
- (e) upon the completion of a post-completion review, the department shall prepare a report documenting all concerned issues, findings, conclusions and recommendations for future reference by the department.

Need to timely conduct post-completion review

4.19 Audit noted that the Project involved a significant project expenditure of \$3,522.1 million as of October 2021 (see para. 1.8). The significant design changes of footbridges constructed under the Project resulted in substantial sums of claims or VOs (see paras. 2.16 to 2.19). While Contracts A and B were substantially completed in December 2016, the post-completion review was not completed until May 2022 (i.e. about 5.4 years thereafter).

Audit recommendation

4.20 **As a post-completion review is a useful project management tool, Audit has *recommended* that the Director of Civil Engineering and Development should remind CEDD staff and consultants to conduct post-completion reviews on major works contracts in a timely manner.**

Response from the Government

4.21 The Director of Civil Engineering and Development agrees with the audit recommendation. He has said that CEDD will remind its staff and consultants to conduct post-completion reviews on major works contracts in a timely manner.

Appendix A
(paras. 1.6 and
1.8(a) refer)

**Contract expenditures
(October 2021)**

Contract	Original contract sum	Up-to-date contract expenditure/ final contract sum (Note 1)	Increase		Increase in provision for price fluctuation adjustment (Note 2)		Increase after price fluctuation adjustment	
	(a)	(b)	(c) = (b) – (a)		(d)		(e) = (c) – (d)	
	(\$ million)	(\$ million)	(\$ million)	%	(\$ million)	%	(\$ million)	%
A	2,063.0	2,844.3 (Note 3)	781.3	37.9%	306.6	14.9%	474.7	23.0%
B	151.8	167.9	16.1	10.6%	2.1	1.4%	14.0	9.2%
Total	2,214.8	3,012.2 (Note 4)	797.4	36.0%	308.7	13.9%	488.7	22.1%

Source: CEDD records

Note 1: The account of Contract B was finalised in May 2020. As of October 2021, the account of Contract A had not been finalised and the amount was the up-to-date contract expenditure as of October 2021.

Note 2: The original contract sums of Contracts A and B included provisions for price fluctuation adjustments.

Note 3: For Contract A, of the up-to-date contract expenditure of \$2,844.3 million, \$2,745.5 million was related to the Project, \$97.2 million was related to works funded by other government departments and \$1.6 million was related to the provision of transportation to public works regional laboratories.

Note 4: Of the \$3,012.2 million, \$2,913.4 million was related to the Project, \$97.2 million was related to works funded by other government departments and \$1.6 million was related to the provision of transportation to public works regional laboratories (see Note 3).

**Consultations with parties concerned on design of footbridge system
under the Project before tendering of Contract A
(August 2006 to August 2007)**

Party concerned	Date	Particulars
HD	August 2006	<p>At a meeting (with participants including THB, CEDD, HD and Consultant Y) discussing the layout of the Project:</p> <p>(a) HD advised that there would be amendments to the footbridges of the Project, including the addition of a footbridge and re-alignment of Footbridge B; and</p> <p>(b) CEDD advised that there would likely be implications on road gazettal.</p>
	October 2006	<p>CEDD informed HD that:</p> <p>(a) CEDD noted in previous meetings that HD might wish to revise the footbridge layout in order to provide a footbridge system which would be more integrated with the adjoining housing developments; and</p> <p>(b) since it was not necessary to include the construction of footbridges in CEDD's works contract, Consultant Y suggested HD to take up the design and construction of the footbridges in order to allow more flexibility to develop an integrated design with the adjoining housing developments. CEDD found Consultant Y's suggestion worth HD's consideration and sought HD's views on Consultant Y's suggestion.</p>
		<p>In response, HD informed CEDD that:</p> <p>(a) HD considered that the design and construction of the proposed footbridges would have many interfaces with the site formation works (such as forming of the adjoining slope, road works, etc.) and therefore, it was best for CEDD to take up the proposed works; and</p> <p>(b) CEDD could implement the site formation and the remaining infrastructure works (including walkways and footbridges) in phases through several works contracts to meet the population intake of the public housing development. This arrangement had been found satisfactory in another site formation project (see Note 17 to para. 2.9(b)) undertaken by CEDD.</p>

Appendix B
(Cont'd)
(para. 2.9 refers)

Party concerned	Date	Particulars
KTDC	March 2007	At a meeting of KTDC in March 2007, a District Council Member raised concerns that the proposed provision of only 3 footbridges might be inadequate to cope with the pedestrian flows arising from the proposed public housing development at the land platforms formed under the Project.
HD	April and May 2007	<p>Consultant Y circulated the layout of the proposed footbridges to various government departments (including HD) for comments.</p> <p>HD informed Consultant Y that:</p> <ul style="list-style-type: none"> (a) footbridge decks of the proposed footbridges needed to be extended across roads to enhance the accessibility and connectivity to the neighbouring communities; (b) HD reiterated the addition of a footbridge and re-alignment of Footbridge B to enhance the overall accessibility of the district; and (c) further review of the locations and number of footbridges was required. <p>In response, Consultant Y informed HD that the footbridge proposal followed the gazetted layout (see para. 2.8) with minor improvement on the footbridge system. Relocation of the proposed footbridges and increasing the number of footbridges would require re-gazetting which would affect the implementation programme of the Project.</p>
ACABAS	June and July 2007	<p>In June and July 2007, CEDD and Consultant Y made the first and second submissions for the proposed Footbridges A to C (under the original design) to ACABAS (see Note 16 to para. 2.9) for consideration respectively. ACABAS considered the submissions not acceptable and commented, among others, that:</p> <ul style="list-style-type: none"> (a) Footbridges A and B appeared to be not serving the functions of footbridges to convey people directly to facilities (such as shopping centre, public transport interchange, bus stops, etc.); and (b) the need and locations of Footbridges A and B should be reviewed.

Appendix B
(Cont'd)
(para. 2.9 refers)

Party concerned	Date	Particulars
ACABAS	August 2007	<p>In August 2007, CEDD and Consultant Y made the third submission for the proposed Footbridges A to C (under the original design) to ACABAS for consideration. ACABAS considered the submission acceptable in principle with the following comments:</p> <ul style="list-style-type: none"> (a) the need for the footbridges, in particular Footbridges A and B, was in doubt. Noting that HD would conduct a traffic review study (see para. 2.12) to review the access and landing locations of the footbridges, ACABAS requested Consultant Y to review the need for the footbridges after completion of HD's study; and (b) the detailed design of the footbridges (after confirming their need) should be resubmitted for ACABAS's advice.

Source: CEDD records

Interfacing problem between Contracts A and B

1. The construction works under Contract B had interfaces with the construction works under Contract A. Before carrying out the construction works under Contract B, certain portions of the construction site (hereinafter referred to as Portions A and B) were required to be handed over from Contractor A to Contractor B. In addition, two roads (hereinafter referred to as Roads A and B) were anticipated to be substantially completed under Contract A for Contractor B's use as access to Portions A and B.

2. During the construction stage of Contract B, there was late handover of Portions A and B from Contractor A to Contractor B. In addition, Contractor B's access (via Road A) to Portion A had been blocked and occupied by Contractor A for carrying out its works under Contract A. In the event, Contractor B submitted claims for EOTs and prolongation costs on the grounds that there were delay in possession of Portions A and B, and deprivation of access to Portion A. According to Consultant Y's assessment of Contractor B's claims:

- (a) Portion A and northern part of Portion B, and southern part of Portion B were given possession to Contractor B in April 2015 and January 2016 respectively, which were later than the possession dates of September 2013 as specified in Contract B;
- (b) at the time when Portion A was given possession to Contractor B in April 2015, the works at Road A were still in progress under Contract A. Contractor B's access (via Road A) to Portion A had subsequently been interrupted and was completely blocked in June 2015 by Contractor A for carrying out its works under Contract A;
- (c) the site access issue was resolved in September 2015 between Contractors A and B with the intervention of Consultant Y. Although the site access issue was resolved, Contractor B could only use the access (via Road A) after the construction of some temporary paving. After formation of temporary paved access in October 2015, Contractor B had no restriction on the use of Portion A; and
- (d) Contractor B's claims were valid. Contractor B was entitled to EOTs of 177.5 days for completing Footbridge D and the related establishment works (involving two sections of works of Contract B), and prolongation costs of \$11.1 million.

Source: CEDD records

Acronyms and abbreviations

ACABAS	Advisory Committee on the Appearance of Bridges and Associated Structures
Audit	Audit Commission
CEDD	Civil Engineering and Development Department
EMSD	Electrical and Mechanical Services Department
EOTs	Extensions of time
FC	Finance Committee
GEO	Geotechnical Engineering Office
ha	Hectares
HD	Housing Department
HyD	Highways Department
KTDC	Kwun Tong District Council
LegCo	Legislative Council
m	Metres
PWSC	Public Works Subcommittee
TD	Transport Department
THB	Transport and Housing Bureau
VOs	Variation orders