

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 705 – CIVIL ENGINEERING

Environmental Protection – Refuse disposal

183DR – Refurbishment and upgrading of Sha Tin Transfer Station

Members are invited to recommend to the Finance Committee the upgrading of **183DR** to Category A at an estimated cost of \$137.1 million in money-of-the-day prices.

PROBLEM

We need to refurbish and upgrade the Sha Tin Transfer Station (STTS) to maintain its operation efficiency.

PROPOSAL

2. The Director of Environmental Protection, with the support of the Secretary for the Environment, proposes to upgrade **183DR** to Category A at an estimated cost of \$137.1 million in money-of-the-day (MOD) prices for the refurbishment and upgrading of the STTS upon the expiry of the existing operation contract.

PROJECT SCOPE AND NATURE

3. The scope of the project comprises design and construction of the following works –

/(a)

- (a) improvement works for station buildings and access roads;
- (b) improvement and enhancement of ventilation and air-scrubbing system, vehicle washing facility and wastewater treatment facility;
- (c) replacement and refurbishment of mechanical waste compactors, mobile plants, tractors, trailers, containers and a road sweeper;
- (d) refurbishment and modification of station electrical and mechanical equipment;
- (e) installation of a bulky waste treatment facility; and
- (f) landscaping works.

4. The proposed works are to be carried out at the STTS and its location plan is at Enclosure 1. The works items are illustrated in Enclosure 2. Subject to funding approval of the Finance Committee, we plan to commence the proposed works in late 2015 for substantial completion by mid-2017. During the implementation of the proposed works, the normal operation of the STTS and the waste transfer service will be maintained.

JUSTIFICATION

5. At present, the STTS located at Shek Mun, Sha Tin serves as the waste reception facility for Sha Tin, Kwun Tong, Sai Kung and part of Tai Po. About 1 100 tonnes per day of municipal solid waste (MSW) collected from these areas are delivered to the STTS for compaction and containerisation followed by road transfer to the Northeast New Territories Landfill for disposal¹. The STTS was built under **5038DR** “Sha Tin Refuse Transfer Station”, with an approved project estimate of \$222 million in MOD prices. The STTS was commissioned in October 1994 and has been facilitating bulk transfer of MSW in an environmentally acceptable manner, greatly reducing the traffic and environmental impact.

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¹ As the Southeast New Territories Landfill and its extension will be designated to accept construction waste only in the near future, we are implementing a waste diversion plan of MSW to other landfills via the refuse transfer station network. While there will be a change in the waste catchment of the STTS, it will continue to serve as the major outlet of MSW arising from Sha Tin and operate within its handling capacity.

6. Upon the expiry of the original operation contract for the STTS in October 2009, a follow-on operation contract was awarded and will expire on 28 October 2015. In June 2014, a feasibility study was commissioned to review the operation of the STTS and formulate the plan for the second follow-on contract. The study confirmed that continual operation of the STTS would be necessary. To enable the STTS to continue with its effective waste transfer service after 21 years of operation, major refurbishment and replacement works are necessary to maintain its operational efficiency². Opportunity is also taken to enhance the environmental performance of the station. Specifically, improvement and enhancement of the ventilation and air scrubbing system, vehicle washing facility and wastewater treatment facility will further minimise the impacts of the STTS to the environment and the neighbourhood. Furthermore, we propose an addition of a bulky waste treatment facility with mechanical equipment for shredding bulky waste including furniture items and wooden pallets, as well as for recovering useful materials such as metals and wood chips to be delivered to the recycling trade.

FINANCIAL IMPLICATIONS

7. We estimate the capital cost of the proposed works to be \$137.1 million in MOD prices (please see paragraph 8 below), broken down as follows –

	\$ million
(a) Improvement works for station buildings and access roads	3.4
(b) Improvement and enhancement of	9.5
(i) ventilation and air-scrubbing system	6.0
(ii) vehicle washing facility and wastewater treatment facility	3.5
(c) Replacement and refurbishment of	56.3
(i) mechanical waste compactors	28.4
(ii) mobile plants	4.8
(iii) tractors, trailers, containers and a road sweeper	23.1
(d) Refurbishment and modification of station electrical and mechanical equipment	24.4
	/(e)

² Some minor refurbishment and modification works for the STTS were carried out in 2009-2010 at a cost of \$12 million funded under block allocation **Subhead 5101DX** "Environmental works, studies and investigations for items in Category D of the Public Works Programme".

	\$ million	
(e) Installation of a bulky waste treatment facility	10.7	
(f) Landscaping works	3.2	
(g) Independent assessor's fees ³	1.0	
(h) Contingencies	9.8	
Sub-total	118.3	(in September 2014 prices)
(i) Provision for price adjustment	18.8	
Total	137.1	(in MOD prices)

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

Year	\$ million (Sept 2014)	Price adjustment factor	\$ million (MOD)
2016 – 2017	60.0	1.12069	67.2
2017 – 2018	49.2	1.18793	58.4
2018 – 2019	8.1	1.25920	10.2
2019 – 2020	1.0	1.33475	1.3
	118.3		137.1

9. We have derived the MOD estimates on the basis of the Government's latest set of assumptions on the trend rate of change in the prices of public sector building and construction output for the period from 2016 to 2020. We plan to implement the proposed works and the follow-on operation of the STTS under a Design-Build-and-Operate (DBO) contract arrangement. The capital cost of \$137.1 million will cover the design and build elements of the contract while the operation element will be funded under the General Revenue Account. The contractual operation period will be 10 years. The DBO contract will provide for price adjustment for the entire contractual period including the operation period.

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³ An independent assessor will be appointed to check and certify that the design and construction of the works comply with the contract requirements.

10. The proposed works will not give rise to additional recurrent expenditure.

11. At present, private waste collectors are charged for MSW disposal at refuse transfer stations. This charging arrangement is now under review in the broader context of MSW charging with due considerations to the “polluter pays” principle and the relevant recommendations of the Council for Sustainable Development.

12. The contract management, supervision and environmental monitoring during the operation stage will be undertaken by the existing staff of the Environmental Protection Department. No additional staff and other recurrent costs will be required.

PUBLIC CONSULTATION

13. We consulted the Health and Environment Committee of the Sha Tin District Council on 8 January 2015. Members in general have no objection to the project. Nonetheless, the Committee passed a motion to request the Government to implement mitigation measures to further minimise the STTS’s impact on environment and traffic to the neighbourhood and report to the Committee regularly. We have replied to the Committee on 21 January 2015 agreeing to take on board the request.

14. We consulted the Legislative Council Panel on Environmental Affairs on 25 February 2015 on the proposed works. Members expressed their support for the project.

ENVIRONMENTAL IMPLICATIONS

15. The existing STTS, which has been in operation before 1 April 1998, is an exempted designated project under the Environmental Impact Assessment Ordinance (Cap.499). For the proposed refurbishment and upgrading works, we completed an environmental review (ER) in January 2015. The ER concluded that the proposed works, with implementation of appropriate design and mitigation measures, will not result in adverse environmental impacts.

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16. Under this project, we will improve the station facilities to enhance the environmental and operational performance of the STTS. These include installation of air curtains at the entrance of the tipping hall to enhance prevention of odour spreading, modification of the air-scrubbing system to improve the odour removal efficiency, enhancement of the wastewater treatment facility to ensure all wastewater generated is properly treated and improvement of the vehicle washing facility to ensure all vehicles are adequately cleaned before leaving the station. The coverage of street cleansing will be extended. We will also increase the frequency of environmental monitoring and audit to ensure that the environmental performance of the STTS fully complies with the statutory requirements. During the design and construction stages, we will require the contractor to appoint an independent assessor to ensure that the environmental performance of the works complies with the contract requirements. We will include in the contract provisions to withhold payment to the contractor if there is any non-compliance with the environmental performance requirements throughout the contract period.

17. At the design stage, we will require the contractor to take measures to reduce the generation of construction waste. In addition, we will require the contractor to reuse inert construction waste (e.g. demolished concrete) on site or in other suitable construction sites as far as possible, in order to minimise the disposal of inert construction waste at public fill reception facilities. We will encourage the contractor to maximise the use of recycled or recyclable inert construction waste, and the use of non-timber formwork to further reduce the generation of construction waste.

18. At the construction stage, we will require the contractor to submit for approval a plan setting out the waste management measures, which will include appropriate mitigation means to avoid, reduce, reuse and recycle inert construction waste. We will ensure that the day-to-day operations on site comply with the approved plan. We will require the contractor to separate the inert portion from non-inert construction waste on site for disposal at appropriate facilities. We will control the disposal of inert and non-inert construction waste at public fill reception facilities and landfills respectively through a trip-ticket system.

19. We estimate that the project will generate about 180 tonnes of construction waste after deduction of materials delivered to recycling. Of this, we will reuse about 15 tonnes (8%) of inert construction waste on site and dispose of the remaining 165 tonnes (92%) of non-inert construction waste at landfills. The total cost for accommodating the non-inert construction waste at landfill sites is estimated to be \$20,625 for this project (based on a unit charge rate of \$125 per tonne at landfills as stipulated in the Waste Disposal (Charges for Disposal of Construction Waste) Regulation).

HERITAGE IMPLICATIONS

20. The proposed works will not affect any heritage site, i.e. all declared monuments, proposed monuments, graded historic sites or buildings, sites of archaeological interest and Government historic sites identified by the Antiquities and Monuments Office.

LAND ACQUISITION

21. The proposed works does not require any land acquisition.

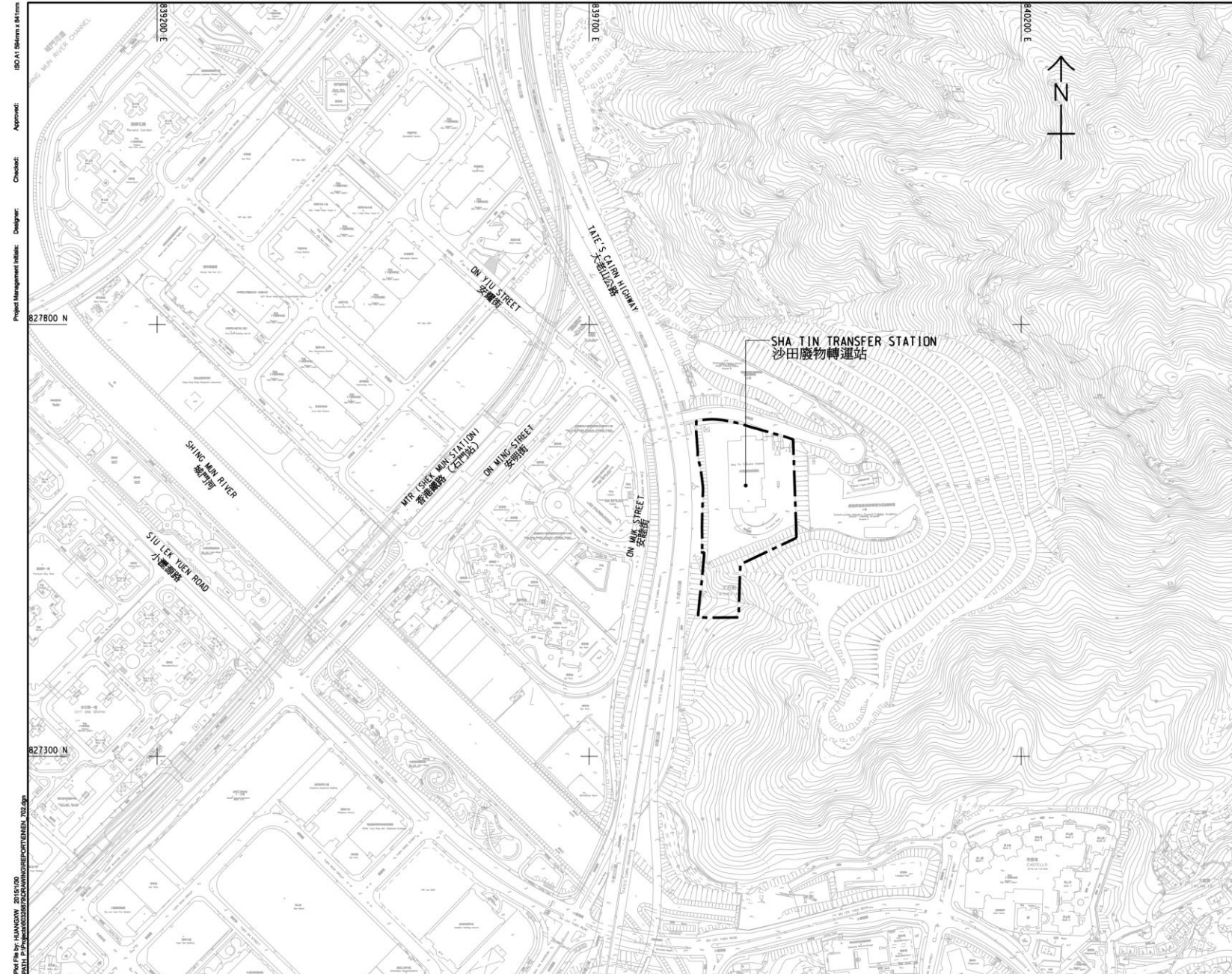
BACKGROUND

22. Currently, there are six RTSs serving the urban areas and new towns and seven small refuse transfer facilities serving the outlying islands. MSW collected by refuse collection vehicles (RCVs) is delivered to the RTSs where it is compacted and containerised and then transferred to the three strategic landfills by either marine or land transport. This method of transporting waste in bulk from RTSs to landfills or other waste treatment facilities is an efficient, environmentally friendly and cost effective mode of waste transfer. It greatly reduces the traffic and environmental impact associated with large number of RCVs moving on the road network.

23. We upgraded **183DR** to Category B in September 2014. In June 2014, we engaged consultant to review the operation of the STTS and formulate the plan for the second follow-on contract. The total estimated cost is \$7.5 million. We charged this amount to block allocation **Subhead 5101DX** “Environmental works, studies and investigations for items in Category D of the Public Works Programme”.

24. The proposed works will not involve any tree removal.


25. We estimate that the proposed works will create 30 jobs (24 for labourers and another 6 professional/technical staff) providing a total employment of 560 man-months.



Project Management Office: Designer: Checked: Approved: ISO 9001 Scheme & 841mm
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AECOM

PROJECT
 REFURBISHMENT AND UPGRADING OF SHA TIN TRANSFER STATION

CLIENT
 環境保護署
 Environmental Protection Department

CONSULTANT
 AECOM Asia Company Ltd.
 www.aecom.com

SUB-CONSULTANTS

ISSUE/REVISION

NO.	DATE	DESCRIPTION	CHK.

STATUS

SCALE **DIMENSION UNIT**
 A1:1:2000 METRES

KEY PLAN

PROJECT NO. **CONTRACT NO.**
 60326879 CE 15/2013(EP)

SHEET TITLE
 LOCATION OF SHA TIN TRANSFER STATION
 沙田廢物轉運站位置

SHEET NUMBER
 60326879/FIGURE 1

Refurbishment and Upgrading Works of the STTS

沙田廢物轉運站翻新及提升工程



Improve and enhance vehicle washing facility
改善及加強車輛清洗設施

Landscaping works
綠化工程

Replace and refurbish mobile plants
更換及翻新移動機械

Works inside the transfer station building:
轉運站大樓內之工程：

- Improve and enhance ventilation and air-scrubbing system
改善及加強通風及空氣淨化系統
- Improve and enhance wastewater treatment facility
改善及加強污水處理設施
- Replace and refurbish mechanical waste compactors
更換及翻新廢物壓縮機
- Reburish and modify station electrical and mechanical equipment
翻新及改裝站內機電裝置
- Install a bulky waste treatment facility
加設處理大型廢物設施

Improve station buildings and access roads
改善站內建築物及通道

Replace and refurbish tractors, trailers,
containers and road sweeper
更換及翻新拖拉車、拖架、貨櫃及洗街車