

**For discussion
on 27 April 2009**

**Legislative Council
Panel on Environmental Affairs**

236DS – Tai Po sewage treatment works, stage 5 phase 2B

PURPOSE

This paper seeks Members' support for the Administration's proposed funding application to the Public Works Subcommittee (PWSC) and Finance Committee (FC) for upgrading **236DS** to Category A at an estimated cost of about \$660 million in money-of-the-day (MOD) prices.

PROPOSAL AND JUSTIFICATION

2. The existing Tai Po sewage treatment works (TPSTW) serving the Tai Po district is a secondary sewage treatment plant with a design capacity of 88 000 cubic metres per day (m^3/day) but without disinfection facilities. Treated effluent from the TPSTW is conveyed sequentially by two effluent pumping stations located in Tai Po and Sha Tin to the Kai Tak Nullah for disposal. In view of the continuing population growth and sewerage network expansion in the Tai Po district in recent years, a need for expansion and upgrading of the TPSTW was identified under the stage 5 extension works.

3. We have been implementing the stage 5 extension works in phases, namely phases 1, 2A and 2B to cope with the progressive increase in sewage flow to TPSTW. In May 2005 and May 2008, we started the construction of **222DS** "Tai Po sewage treatment works, stage 5 phase 1" and **342DS** "Tai Po sewage treatment works, stage 5 phase 2A – disinfection" respectively. Upon completion of these 2 phases in early 2010, the design capacity of TPSTW will be increased from 88 000 m^3/day to 100 000 m^3/day and ultra-violet disinfection facilities will be installed at TPSTW.

4. Based on the latest planning figures, we forecast that the sewage flow from residential, commercial, industrial and other developments in the Tai Po district will increase to 107 000 m^3/day by 2016. To cope with the projected increase in sewage flow, we upgraded **236DS** to Category B in October 2006 to further increase the treatment capacity of TPSTW to 120 000 m^3/day by constructing new facilities and modification of a number of existing units. If we do not implement the proposed phase 2B extension, the effluent quality of TPSTW will deteriorate as the sewage flow continues to increase, leading to the discharge of inadequately treated effluent into Victoria Harbour.

PROJECT SCOPE AND NATURE

5. The scope of **236DS** comprises -
- (a) construction of a primary sedimentation tank, three aeration tanks and two final clarifiers;
 - (b) modification of four existing final clarifiers;
 - (c) expansion and modification of existing inlet pumping facilities;
 - (d) expansion of sludge treatment facilities; and
 - (e) ancillary works.

A layout plan showing the proposed works is at **Enclosure 1**.

6. We plan to commence construction in early 2010 for completion in end 2013.

FINANCIAL IMPLICATIONS

7. We estimate the capital costs of the proposed works to be about \$660 million¹ in MOD prices.
8. We estimate that the proposed works will create about 200 jobs¹ (175 for labourers and another 25 for professional/technical staff) providing a total employment of 8 060 man-months.

PUBLIC CONSULTATION

9. On 12 November 2008, we consulted the Environment, Housing and Works Committee of the Tai Po District Council on the project and members supported the proposed works.
10. We also consulted the village representatives of Yue Kok, Fung Yuen and Ha Hang Villages located near the TPSTW and Hong Kong Science and Technology Parks Corporation, the management agent of Tai Po Industrial Estate, in November 2008, and they all had no objection to the proposed works.

¹ These are the latest estimates of the capital cost and new job opportunities. We will finalize the project cost and new job opportunities, and include the cost breakdown, prior to submitting the proposals to the PWSC for consideration.

ENVIRONMENTAL IMPLICATIONS

11. **236DS** is a designated project under the Environmental Impact Assessment (EIA) Ordinance and we have completed an EIA study for the whole stage 5 extension works, of which **236DS** forms a part. The EIA study concluded that with the implementation of mitigation measures, the proposed works would not give rise to unacceptable environmental impacts. We obtained an Environmental Permit for the stage 5 phase 2 works, of which **236DS** forms a part, on 22 March 2007.

12. For short term impacts during construction of the proposed works under **236DS**, we will control noise, dust and site run-off to levels within the established standards and guidelines through implementation of mitigation measures, such as the use of silenced construction plants to reduce noise generation, water-spraying to reduce emission of fugitive dust, and proper treatment of site run-off before discharge. We will also carry out regular site inspections to ensure that these recommended mitigation measures and good site practice are properly implemented on site.

13. We have considered in the planning and design stages ways to reduce the generation of construction waste where possible, including optimization of the sewerage design to minimize the extent of excavation and to avoid as far as practicable demolition of existing structures. In addition, we will require the contractor to reuse inert construction waste (e.g. excavated soil for backfilling) on site or in other suitable construction sites as far as possible, in order to minimize the disposal of inert construction waste to public fill reception facilities². We will encourage the contractor to maximize the use of recycled or recyclable inert construction waste, as well as the use of non-timber formwork to further minimize the generation of construction waste.

14. We will also 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 construction waste and non-inert construction waste to public fill reception facilities and landfills respectively through a trip-ticket system.

15. We estimate that the project will generate in total about 153 700 tonnes of construction waste. Of these, we will reuse about 5 000 tonnes (3%) of inert construction waste on site and deliver 147 000 tonnes (96%) of inert construction waste to public fill reception facilities for subsequent

² Public fill reception facilities are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation. Disposal of inert construction waste in public fill reception facilities requires a licence issued by the Director of Civil Engineering and Development.

reuse. In addition, we will dispose of 1 700 tonnes (1%) of non-inert construction waste at landfills. The total cost for accommodating the construction waste at public fill reception facilities and landfill sites is estimated to be about \$4.2 million for this project (based on a unit cost of \$27/tonne for disposal at public fill reception facilities and \$125/tonne³ at landfills).

ADVICE SOUGHT

16. Members are invited to support the Administration's proposal to upgrade **236DS** to Category A at an estimated cost of about \$660 million in MOD prices for consideration by the PWSC in May 2009 with a view to seeking funding approval by the FC in June 2009.

Environmental Protection Department
April 2009

³ The estimate has taken into account the cost for developing, operating and restoring the landfills after they are filled and the aftercare required. It does not include the land opportunity cost for existing landfill sites (which is estimated at \$90/m³), nor the cost to provide new landfills (which is likely to be more expensive) when the existing ones are filled.

0 CM

10

20

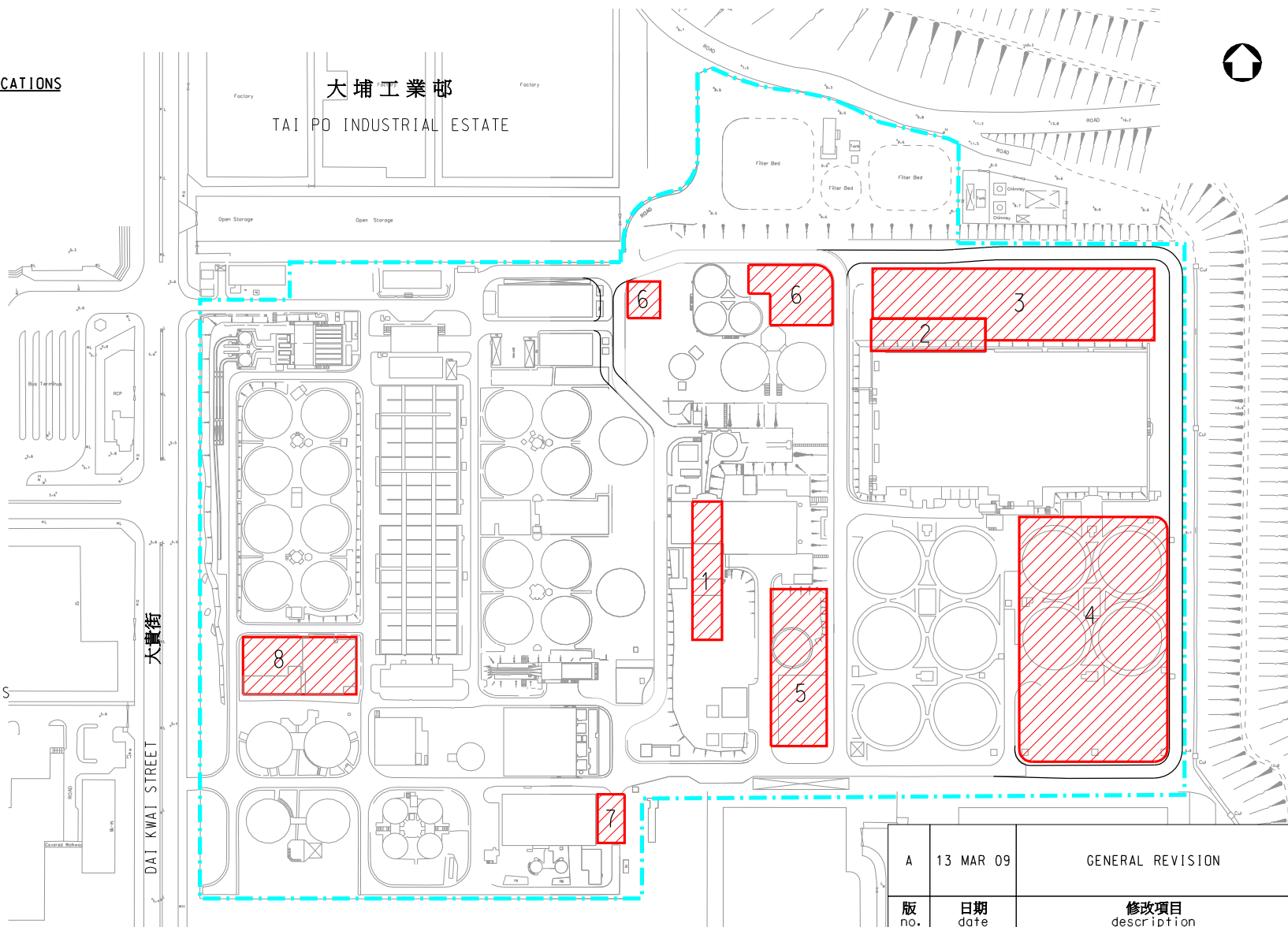
0 CM

10

 主要工程/改建工程
MAJOR WORKS / MODIFICATIONS

- 1. 污水入口設施
INLET WORKS
- 2. 一級沉澱池
PRIMARY SEDIMENTATION TANKS
- 3. 曝氣池
AERATION TANKS
- 4. 最後沉澱池
FINAL CLARIFIERS
- 5. 污泥濃縮設施
SLUDGE THICKENING FACILITIES
- 6. 污泥消化及附屬設施
SLUDGE DIGESTION AND ANCILLARY FACILITIES
- 7. 污泥脫水設施
SLUDGE DEWATERING FACILITIES
- 8. 濾液處理設施
FILTRATE TREATMENT FACILITIES


 大埔污水處理廠範圍
EXTENT OF TAI PO SEWAGE TREATMENT WORKS



圖則名稱 drawing title

工務工程計劃編號 236DS
 大埔污水處理廠第5階段第2B期工程
 PWP ITEM No. 236DS
 TAI PO SEWAGE TREATMENT WORKS, STAGE 5 PHASE 2B

繪畫 drawn	SIGNED M. W. CHEUNG	日期 date	27 FEB 09
核對 checked	SIGNED Ir T. K. LIU	日期 date	27 FEB 09
批核 approved	SIGNED Ir S. K. IP	日期 date	27 FEB 09
部門 office	污水工程部 SEWERAGE PROJECTS DIVISION		

A	13 MAR 09	GENERAL REVISION	SIGNED T. K. LIU E/S13
版 no.	日期 date	修改項目 description	簡簽 initial
		圖則編號 drawing no.	比例 scale
		DDN/236DS1/8060A	DIAGRAMMATIC
保留版權 COPYRIGHT RESERVED			
 香港特別行政區政府渠務署 DRAINAGE SERVICES DEPARTMENT GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION			