For discussion **PWSC(2011-12)22**
on 14 June 2011

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 704 – DRAINAGE
Civil Engineering – Drainage and erosion protection
140CD – Reconstruction and rehabilitation of Kai Tak Nullah from Po Kong Village Road to Tung Kwong Road – remaining works

Members are invited to recommend to Finance Committee the upgrading of **140CD** to Category A at an estimated cost of $1,602.0 million in money-of-the-day prices for reconstruction and rehabilitation of Kai Tak Nullah from Po Kong Village Road to Tung Kwong Road.

PROBLEM

There have been severe flooding incidents during heavy rainstorms along Choi Hung Road especially at its junction with Shatin Pass Road.

PROPOSAL

2. The Director of Drainage Services, with the support of the Secretary for Development, proposes to upgrade **140CD** to Category A at an estimated cost of $1,602.0 million in money-of-the-day (MOD) prices for reconstruction and rehabilitation of a section of Kai Tak Nullah from Po Kong Village Road to Tung Kwong Road.

/PROJECT .....

PROJECT SCOPE AND NATURE

3. The scope of works under **140CD** comprises –

(a) reconstruction and rehabilitation of a section of Kai Tak Nullah from Po Kong Village Road to Tung Kwong Road of about 600 metres (m) long;

(b) construction of a box culvert of about 400 m long alongside the Kai Tak Nullah from Wong Tai Sin Police Station to Tung Tai Lane;

(c) relocation of the affected existing watermains and sewers; and

(d) associated works, including landscaping works and in-situ reprovisioning of an existing footbridge near Tung Tai Lane.

The site plan and the artist's impression of the reconstructed and rehabilitated nullah are at Enclosures 1 and 2 respectively.

4. Subject to the funding approval of the Finance Committee, we plan to commence construction of the proposed works under paragraph 3 in October 2011 with a view to completing the proposed works under paragraphs 3(a), (b) and (c) in phases from 2015 onwards. All the proposed works, including those under paragraph 3(d), will be completed by May 2017.

JUSTIFICATION

5. The drainage capacity of Kai Tak Nullah is inadequate to meet the current flood protection standard and the areas in the vicinity of the nullah in Wong Tai Sin are susceptible to flooding. Flooding incidents occur along Choi Hung Road especially at its junction with Shatin Pass Road and severely affect the traffic networks of Wong Tai Sin and its adjacent districts during heavy rainstorms. As the 400 m-long section between Wong Tai Sin Police Station and Tung Tai Lane is comparatively narrow, it forms a bottleneck of the Kai Tak Nullah that limits its drainage capacity. The bottleneck also adversely affects the discharge from the upstream drainage system to the nullah. Whilst it is not possible to widen the nullah without affecting the existing Choi Hung Road, we propose to provide a box culvert alongside the nullah to remove the bottleneck. In addition to the proposed box culvert, it is necessary to deepen the nullah and relocate the existing watermains and sewers away from the nullah to improve its drainage capacity and mitigate the flooding risk to the surrounding areas.

/6. .....

6. The above improvement works will affect an existing footbridge across Kai Tak Nullah near Tung Tai Lane. It is necessary to re-provide the footbridge in-situ.

7. In planning for our proposed drainage works, we originally proposed to deck the section of Kai Tak Nullah between Po Kong Village Road and Tung Tai Lane. Indeed, in the early years, decking of nullahs was welcomed by District Councils and the local community as a means to improve the environment. However, in the course of local consultation, some Wong Tai Sin District Council members and the concerned groups drew reference to some overseas experience in river revitalisation projects which have the effect of uplifting the local city environment and providing leisure ambience to residents. The Drainage Services Department has fully engaged the local groups in exploring alternatives to decking, and the urban design planning work subsequently undertaken by the Kai Tak Office under the Civil Engineering and Development Department has given an added dimension to the discussions. There are clear public aspirations for revitalising the nullah into a special green river and townscape feature to enhance the visual quality and image of the nullah. Accordingly, we have revised the design to provide an undecked nullah, together with the associated beautification works. We will rehabilitate the nullah into a green river corridor without decking in urban area and introduce aesthetic, greening, landscaping and ecological elements[1] at the sides and bottom of the nullah. Upon completion, the proposed works will improve the living environment through enhancement of townscape of the area, provision of a scenic and leisure place for the enjoyment of the public, as well as fostering closer connection with adjacent areas[2].

FINANCIAL IMPLICATIONS

8. We estimate the cost of the proposed works to be $1,602.0 million in MOD prices (please see paragraph 9 below), broken down as follows –

		$ million
(a)	Reconstruction and rehabilitation of nullah	458.0
(b)	Construction of box culvert	287.0

/(c) …..

---

[1] The ecological elements mainly include the proposed fish shelters and comparatively natural nullah bed.

[2] The pedestrian facilities along the nullah and the footbridge across the nullah near Tung Tai Lane would be improved.

				$ million	
(c)	Relocation of the affected existing watermains and sewers			145.0	
(d)	Associated works, including landscaping works and footbridge reprovisioning			94.0	
(e)	Environmental mitigation measures			27.0	
(f)	Consultants' fees for			7.5	
	(i)	contract administration	3.1		
	(ii)	management of resident site staff	4.4		
(g)	Remuneration of resident site staff			123.3	
(h)	Contingencies			114.0	
			Sub-total	1,255.8	(in September 2010 prices)
(i)	Provision for price adjustment			346.2	
			Total	1,602.0	(in MOD prices)

A breakdown of the estimates for the consultants' fees and resident site staff costs by man-months is at Enclosure 3.

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

Year	**$ million (Sept 2010)**	**Price adjustment factor**	**$ million (MOD)**
2011 – 2012	30.0	1.04525	31.4
2012 – 2013	158.0	1.10143	174.0
2013 – 2014	215.0	1.16201	249.8

/2014 .....

Year	$ million (Sept 2010)	Price adjustment factor	$ million (MOD)
2014 – 2015	215.0	1.22592	263.6
2015 – 2016	205.0	1.29335	265.1
2016 – 2017	201.0	1.36448	274.3
2017 – 2018	140.0	1.43953	201.5
2018 – 2019	58.0	1.51870	88.1
2019 – 2020	33.8	1.60223	54.2
	1,255.8		1,602.0

10. We have derived the MOD estimate 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 2011 to 2020. We will deliver the proposed works under a re-measurement contract because of the uncertainties arising from the underground utilities and ground condition and hence the scale of works to be involved. The contract will provide for price adjustments.

11. We estimate the additional annual recurrent expenditure arising from the proposed works to be $900,000.

PUBLIC CONSULTATION

12. We consulted the Wong Tai Sin District Council on 8 March 2011 on the proposed works. Members generally supported the proposed works.

13. We circulated to the Legislative Council Panel on Development an information paper on the proposed works on 12 May 2011. Members raised no objection to the proposed works.

/ENVIRONMENTAL …..

ENVIRONMENTAL IMPLICATIONS

14. This is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). We have completed the Preliminary Environmental Review (PER), which concludes that the project will not cause any long-term adverse environmental impacts. We have included in paragraph 8(e) above a sum of $27 million (in September 2010 prices) in the project estimate for implementing suitable measures recommended by the PER to mitigate short-term environmental impacts during construction.

15. At the planning and design stages, we have considered ways to optimise the size and extent of the proposed underground drainage works in order to reduce the generation of construction waste where possible. In addition, we will require the contractor to reuse inert construction waste (e.g. excavated soil) 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[3]. 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 minimise the generation of construction waste.

16. At the construction stage, we will control noise, dust and site run-off nuisances to levels within established standards and guidelines through implementation of mitigation measures in the relevant contract. These measures include the use of temporary noise barriers, quieter construction equipment, frequent cleaning and watering of the site etc. We will carry out regular site inspections to ensure that these recommended mitigation measures and good site practices are properly implemented.

17. 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 at public fill reception facilities and landfills respectively through a trip-ticket system.

/18. …..

---

[3] 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.

18. We estimate that the project will generate in total about 51 000 tonnes of construction waste. Of these, we will reuse about 2 000 tonnes (4%) of inert construction waste on site and deliver 46 000 tonnes (90%) of inert construction waste to public fill reception facilities for subsequent reuse. We will dispose of the remaining 3 000 tonnes (6%) of non-inert construction waste at landfills. The total cost for accommodating construction waste at public fill reception facilities and landfill sites is estimated to be $1.6 million for this project (based on a unit cost of $27 per tonne for disposal at public fill reception facilities and $125 per tonne[4] at landfills).

HERITAGE IMPLICATIONS

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

TRAFFIC IMPLICATIONS

20. The proposed works at Choi Hung Road will be carried out in phases and we will implement temporary traffic arrangements, so that the existing two-lane traffic at both Choi Hung Road northbound and southbound will be maintained during construction. During construction, we will establish a Traffic Management Liaison Group (TMLG) to discuss, scrutinise and review the proposed temporary traffic arrangements. We will maintain close contact with Transport Department, the Hong Kong Police Force, Highways Department, District Offices, the relevant District Councils, various public transport operators and utility undertakers. We will invite their representatives to attend the TMLG meetings for reviewing and endorsement of the proposed temporary traffic arrangements before implementation.

LAND ACQUISITION

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

/**BACKGROUND** …..

---

[4] This 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 per m^3), nor the cost to provide new landfills (which is likely to be more expensive), when the existing ones are filled.

BACKGROUND INFORMATION

22. In October 2005, we upgraded **140CD** to Category B. In July 2006, we engaged consultants to carry out preliminary design, surveys, site investigations, testing, impact assessments and detailed design for the works under **140CD** at an estimated cost of $13.8 million in MOD prices. We charged this amount to block allocation **Subhead 4100DX** "Drainage works, studies and investigations for items in Category D of the Public Works Programme".

23. In July 2010, we upgraded part of **140CD** to Category A as **162CD** "Reconstruction and rehabilitation of Kai Tak Nullah from Po Kong Village Road to Tung Kwong Road – stage 1" at an approved project estimate of $159.4 million in MOD prices for local road widening works at Choi Hung Road adjacent to the section of Kai Tak Nullah near Wong Tai Sin Police Station and construction of additional twin-cell box culvert adjoining the Kai Tak Nullah across Prince Edward Road East. Construction commenced in August 2010 for completion by late 2012.

24. Of the 131 trees within the boundary of the proposed works, 88 trees will be preserved. Of the remaining 43 trees to be removed, 24 trees will be transplanted and 19 trees will be felled. All the trees to be removed are not important trees[5]. We will incorporate planting proposal as part of the proposed works, including planting of 39 trees.

25. We estimate that the proposed works will create about 300 jobs (245 for labourers and 55 for professional/technical staff) providing a total employment of 18 100 man-months.

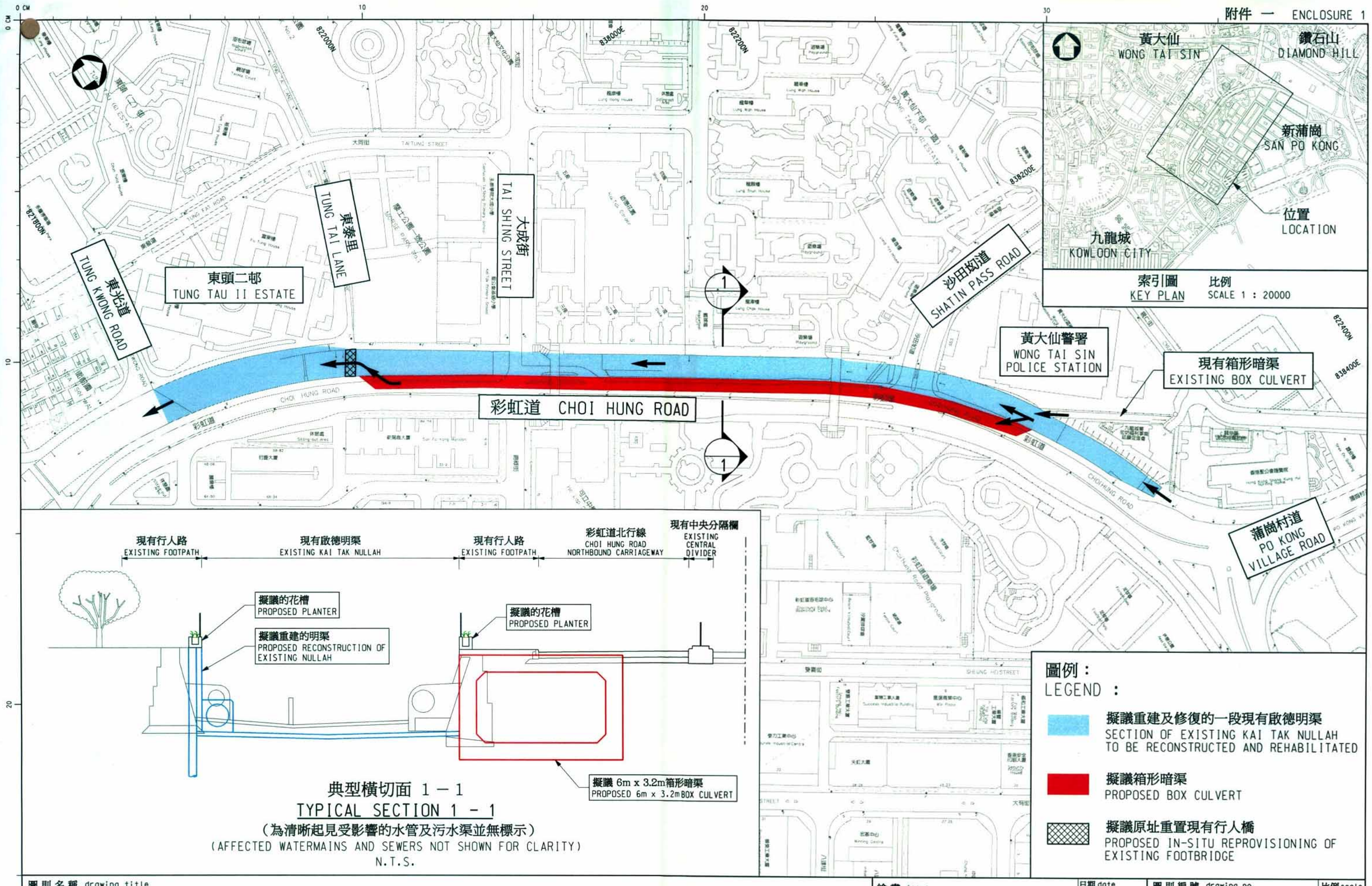
Development Bureau
June 2011

---

[5] An "important tree" refers to trees in the Register of Old and Valuable Trees, or any other trees that meet one or more of the following criteria –

(a) trees of 100 years old or above;
(b) trees of cultural, historical or memorable significance e.g. Fung Shui tree, tree as landmark of monastery or heritage monument, and trees in memory of an important person or event;
(c) trees of precious or rare species;
(d) trees of outstanding form (taking account of overall tree sizes, shape and any special features) e.g. trees with curtain like aerial roots, trees growing in unusual habitat; or
(e) trees with trunk diameter equal or exceeding 1.0 metre (m) (measured at 1.3 m above ground level), or with height/canopy spread equal or exceeding 25 m.

附件 一 ENCLOSURE 1



典型橫切面 1 － 1

TYPICAL SECTION 1 - 1

（為清晰起見受影響的水管及污水渠並無標示）

(AFFECTED WATERMAINS AND SEWERS NOT SHOWN FOR CLARITY)

N.T.S.

圖例：

LEGEND ：

- 擬議重建及修復的一段現有啟德明渠
  SECTION OF EXISTING KAI TAK NULLAH TO BE RECONSTRUCTED AND REHABILITATED
- 擬議箱形暗渠
  PROPOSED BOX CULVERT
- 擬議原址重置現有行人橋
  PROPOSED IN-SITU REPROVISIONING OF EXISTING FOOTBRIDGE

圖則名稱 drawing title

工程計劃編號和名稱：

4140CD － 重建和修復一段由蒲崗村道至東光道的啟德明渠 － 餘下工程

PROJECT NO. AND TITLE:

4140CD - RECONSTRUCTION AND REHABILITATION OF KAI TAK NULLAH FROM PO KONG VILLAGE ROAD TO TUNG KWONG ROAD - REMAINING WORKS

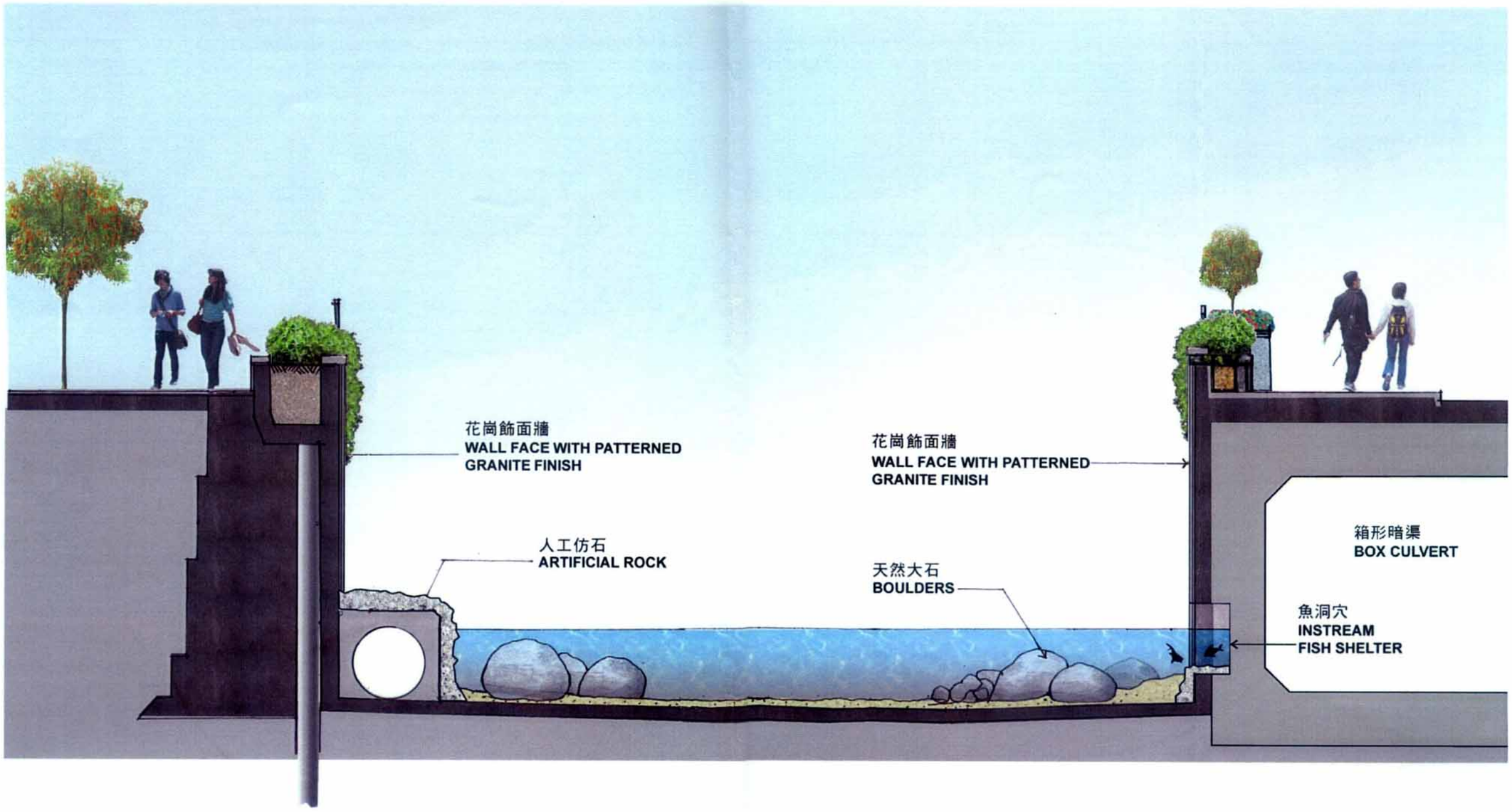
繪畫 drawn	T.M. SIU	日期 date
核對 checked	W.H. CHEUNG	日期 date
批核 approved	K.S. TONG	日期 date
部門 office	工程管理部 PROJECT MANAGEMENT DIVISION	

圖則編號 drawing no. DPM/140CD/0002

比例 scale 1 : 2000 OR AS SHOWN

香港特別行政區政府渠務署
DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION

Col_pdf_cswp_RICOH7300.plt PLOTPEN.TBL $$colortable$$ $$rend_attr$$ C:\TEMP\dsd_pw\dms10906\140cd_0002_section-0.dgn A3 420x297



重建和修復後啟德明渠的構思圖
ARTIST'S IMPRESSION OF THE RECONSTRUCTED AND REHABILITATED KAI TAK NULLAH

圖則名稱 drawing title

工程計劃編號和名稱：
4140CD – 重建和修復一段由蒲崗村道至東光道的啟德明渠 – 餘下工程

PROJECT NO. AND TITLE:
4140CD - RECONSTRUCTION AND REHABILITATION OF KAI TAK NULLAH FROM PO KONG VILLAGE ROAD TO TUNG KWONG ROAD - REMAINING WORKS

繪畫 drawn	T.M. SIU	日期 date
核對 checked	W.H. CHEUNG	日期 date
批核 approved	K.S. TONG	日期 date
部門 office	工程管理部 PROJECT MANAGEMENT DIVISION	

圖則編號 drawing no. DPM/140CD/0003

比例 scale N.T.S

香港特別行政區政府渠務署
DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION

Col_pdf_cswp_RICOH7300.plt PLOTPEN.TBL $$colortable$$ $$rend_attr$$ C:\TEMP\dsd_pw\dms10906\140cd_0003_landscape-0.dgn A3 420x297

140CD – Reconstruction and rehabilitation of Kai Tak Nullah from Po Kong Village Road to Tung Kwong Road – remaining works

Breakdown of the estimates for consultants' fees and resident site staff costs (in September 2010 prices)

			Estimated man-months	Average MPS* salary point	Multiplier (Note 1)	Estimated fee ($ million)
(a)	Consultants' fees for contract administration (Note 2)	Professional	-	-	-	1.9
		Technical	-	-	-	1.2
					Sub-total	3.1
(b)	Resident site staff costs (Note 3)	Professional	720	38	1.6	67.0
		Technical	1 902	14	1.6	60.7
					Sub-total	127.7
	Comprising –					
	(i) Consultants' fees for management of resident site staff					4.4
	(ii) Remuneration of resident site staff					123.3
					Total	**130.8**

* MPS = Master Pay Scale

Notes

1. A multiplier of 1.6 is applied to the average MPS salary point to estimate the cost of resident site staff supplied by the consultants. (As at now, MPS salary point 38 = $58,195 per month and MPS salary point 14 = $19,945 per month.)

2. The consultants' staff cost for contract administration is calculated in accordance with the existing consultancy agreement for the design and construction of the project. The construction phase of the assignment will only be executed subject to Finance Committee's approval to upgrade **140CD** to Category A.

3. The actual man-months and actual costs will only be known after completion of the construction works.